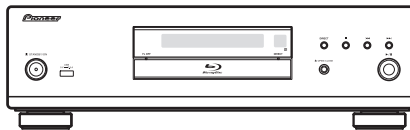


Pioneer

Service Manual



BDP-LX88-K

ORDER NO.
RRV4580

Blu-ray 3D™ PLAYER

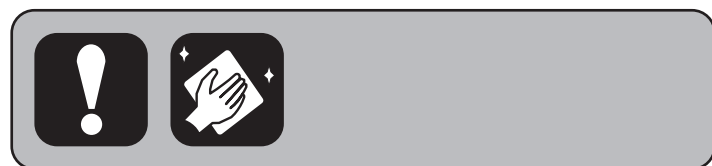
BDP-LX88-K

BDP-LX88-S

BDP-LX88

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	DVD Region No.	BD Region No.	Serial No.	Remarks
BDP-LX88-K	YXE8	AC 220 V to 240 V	2	B	&&&&#####YY	YY: Europe
BDP-LX88-S	YXE8	AC 220 V to 240 V	2	B	&&&&#####YY	YY: Europe
BDP-LX88	LXE	AC 220 V to 240 V	3	A	&&&&#####LL	LL: Asean
BDP-LX88	FXE	AC 110 V	3	A	&&&&#####TA	TA: Taiwan



PIONEER CORPORATION 1-1, Shin-ogura, Saiwai-ku, Kawasaki-shi, Kanagawa 212-0031, Japan

PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.

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K-MZV DEC. 2014 Printed in Japan

SAFETY INFORMATION

!

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

Laser Pickup specifications and Laser characteristics	
BD	Wave length : 405 nm Operating output : 1.16 mW CW, Class 1 Maximum output : Class 2 (under fault condition)
DVD	Wave length : 657 nm Operating output : 178 μ W CW, Class 1 Maximum output : Class 1 (under fault condition)
CD	Wave length : 785 nm Operating output : 174 μ W CW, Class 1 Maximum output : Class 1 (under fault condition)

CAUTION
This product is a class 1 laser product classified under the Safety of laser products, IEC 60825-1:2007, but this product contains a laser diode higher than Class 1. To ensure continued safety, do not remove any covers or attempt to gain access to the inside of the product.
Refer all servicing to qualified personnel.

CLASS 1 LASER PRODUCT

The following caution label appears on your unit.
Location: inside of the unit

CAUTION – CLASS 2 LASER
RADIATION WHEN OPEN
DO NOT STARE INTO THE BEAM

D58-5-2-2b*_B1_En

LABEL CHECK

BDP-LX88-K, S/YXE8
BDP-LX88/LXE

CLASS 1
LASER PRODUCT

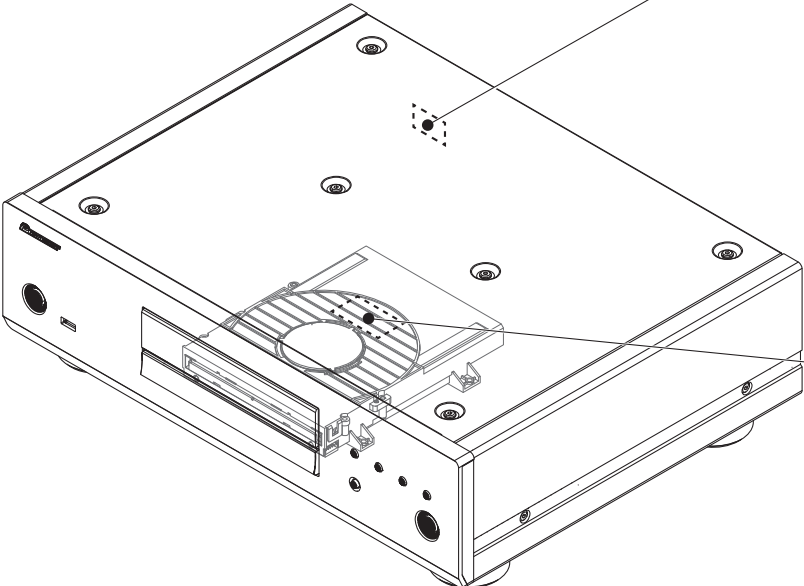
BDP-LX88/FXE

CLASS 1
LASER PRODUCT
第1類雷射產品

(Printed on the Back chassis)

The following caution label appears on your unit.
Location: inside of the unit

CAUTION – CLASS 2 LASER
RADIATION WHEN OPEN
DO NOT STARE INTO THE BEAM



BDP-LX88-K

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1. SERVICE PRECAUTIONS

1.1 NOTES ON SOLDERING

A

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.
- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 °C.
Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 °C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Do NOT use a soldering iron whose tip temperature cannot be controlled.

B

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:

- Parts numbers of lead-free solder:
GYP1006 1.0 in dia.
GYP1007 0.6 in dia.
GYP1008 0.3 in dia.

C

D

E

F

2. SPECIFICATIONS

Type			Blu-ray 3D™ PLAYER	
Rated voltage			AC 220 V to 240 V (YXE, LXE) AC 110 V (FXE)	
Rated frequency			50 Hz/60 Hz	
Power consumption			40 W	
Power consumption (standby)			0.3 W	
Power consumption (Network Standby on)			5 W	
Weight			13.4 kg	
External dimensions (including projecting parts)			435 mm (W) x 130 mm (H) x 339 mm (D)	
Tolerable operating temperature			+5 °C to +35 °C	
Tolerable operating humidity			5 % to 85 % (no condensation)	
Output terminals	HDMI		2 set, 19-pin: 5 V, 250 mA	
	Audio outputs	2-channel (left/right)	1 set, RCA jacks	
			1 set, XLR jacks	
		Audio output level		RCA : 200 mVrms (1 kHz, –20 dB) XLR : 400 mVrms (1 kHz, –20 dB)
		Frequency response		4 Hz to 88 kHz (192 kHz sampling)
	Digital audio outputs	Coaxial	1 set, RCA jacks	
		Optical	1 set, Optical digital jack	
	LAN			1 set, Ethernet jack (10BASE-T/100BASE-TX)
USB			2 set, Type A	



Note

- The specifications and design of this product are subject to change without notice.
- This item incorporates copy protection technology that is protected by U.S. patents and other intellectual property rights of Rovi Corporation. Reverse engineering and disassembly are prohibited.
- Corporation and product names mentioned herein are trademarks or registered trademarks of the respective corporations.

Accessories

- Remote control x 1
(VXX3392)
- AAA 700 size manganese batteries x 2
- Power cord
(YXE8, LXE: ADG7062)
(FXE: ADG7076)
- Warranty card (YXE8 only)
- Software license notice
(70-PONEER-LCSB4)
- Operating instructions
(YXE8: 72-BDPL88-GBRB1, 72-BDPL88-EURB1)
(LXE: 72-BDPL58-TWNB1, 72-BDPL88-GBRB1)
(FXE: 72-BDPL58-TWNB1)
- Software update notice
(70-BDPX58-SHTB2)
- Taiwan label (FXE only)
(71-BDPL88-FXEB1)

3. BASIC ITEMS FOR SERVICE

3.1 CHECK POINTS AFTER SERVICING

A

Items to be checked after servicing

To keep the product quality after servicing, confirm recommended check points shown below.

No.	Procedures	Check points
1	Confirm the firmware version on Test Mode.	The version of the firmware must be latest. Update firmware to the latest one, if it is not the latest.
2	Confirm whether the customer complain has been solved. If the customer complain occurs with the specific disc, use it for the operation check.	The customer complain must not be reappeared. Video, audio and operations must be normal.
3	Play back a CD. (track search)	Audio and operations must be normal.
4	Play back a SACD.	Audio and operations must be normal.
5	Play back a DVD. (Menu operation, Title/chapter search)	Video, audio and operations must be normal.
6	Play back a BD. (Menu operation, Title/chapter search)	Video, audio and operations must be normal.
7	Check the appearance of the product.	No scratches or dirt on its appearance after receiving it for service.

See the table below for the items to be checked regarding video and audio.

Item to be checked regarding video		Item to be checked regarding audio	
Block noise	Too dark	Distortion	Volume too high
Horizontal noise	Too bright	Noise	Volume fluctuating
Dot noise	Color disappearance	Volume too low	Sound interrupted
Disturbed image (video jumpiness)	Mottled color		

D

3.2 JIGS LIST

Jigs List

Jig Name	Part No.	Purpose of use / Remarks
DVD Test Disc (DVD-Video)	GGV1025	Check of DVD-Video
BD-ROM Test Disc	GGV1350	Check of BD-ROM
BD-ROM Test Disc (One layer type)	GGV1368	For Adjustment

Cleaning

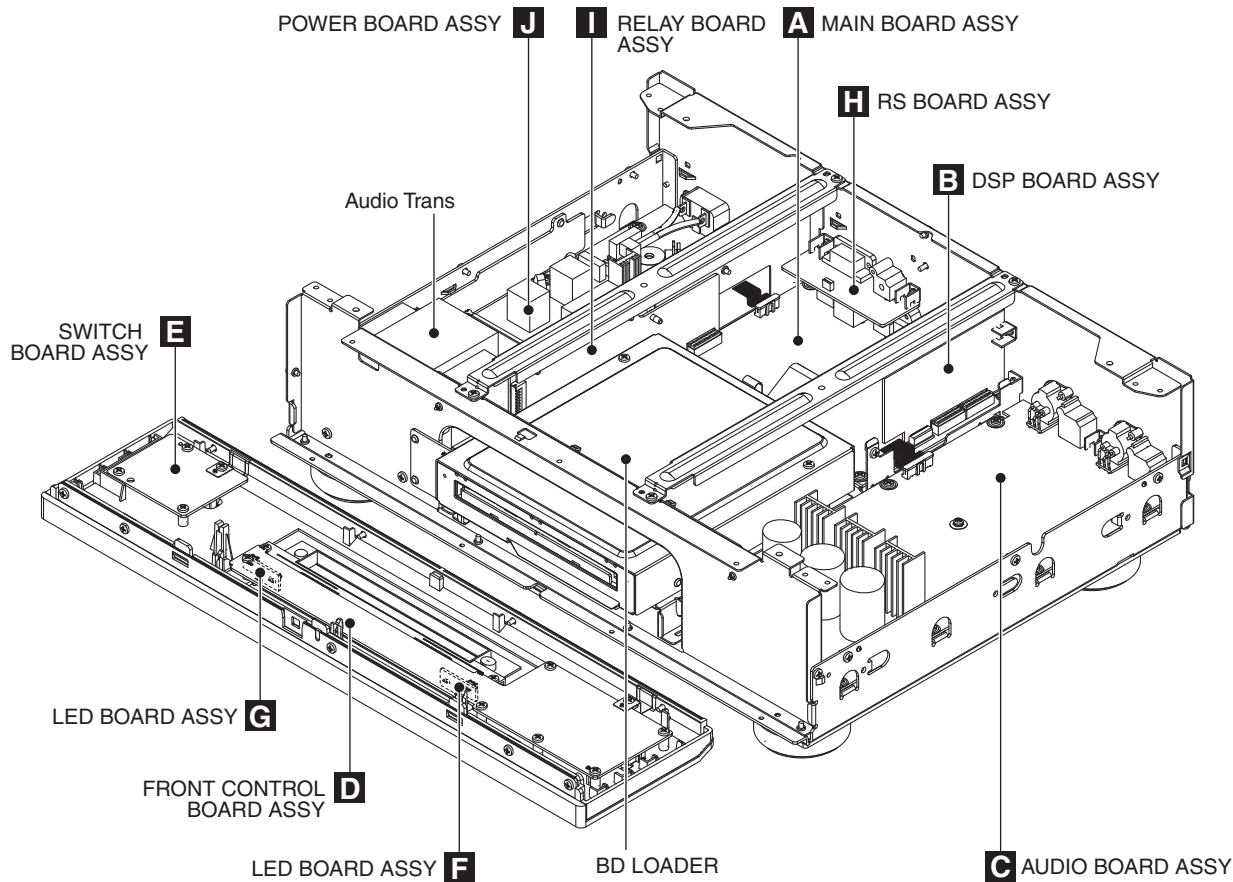


Before shipping out the product, be sure to clean the following positions by using the prescribed cleaning tools.

Position to be cleaned	Name	Part No.	Remarks
Pickup lens	Cleaning liquied	GEM1004	Refer to "7. DISASSEMBLY".
	Cleaning paper	GED-008	

5

3.3 PCB LOCATIONS

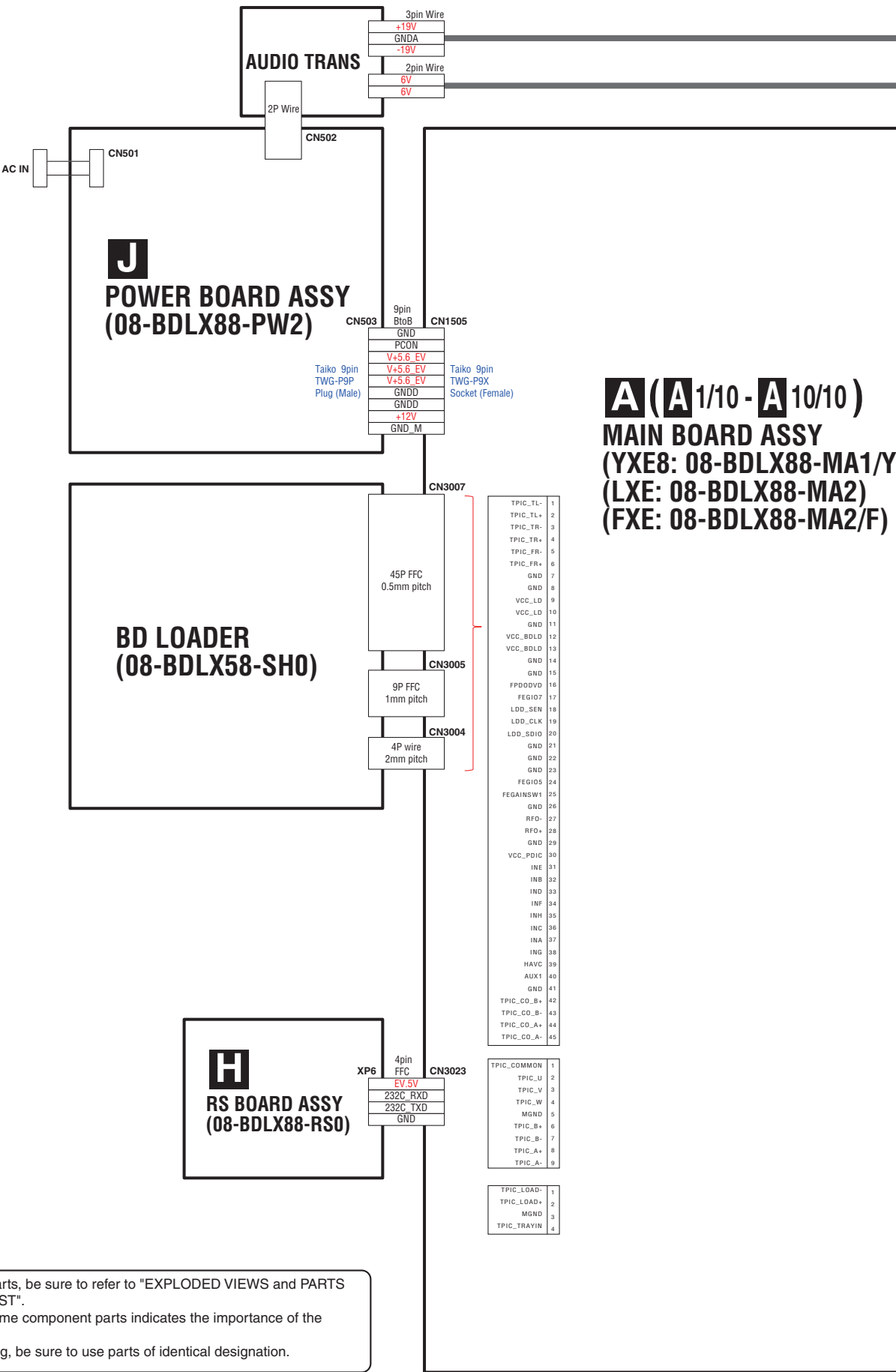


NOTES: ● Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.
● The ⚠ mark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.

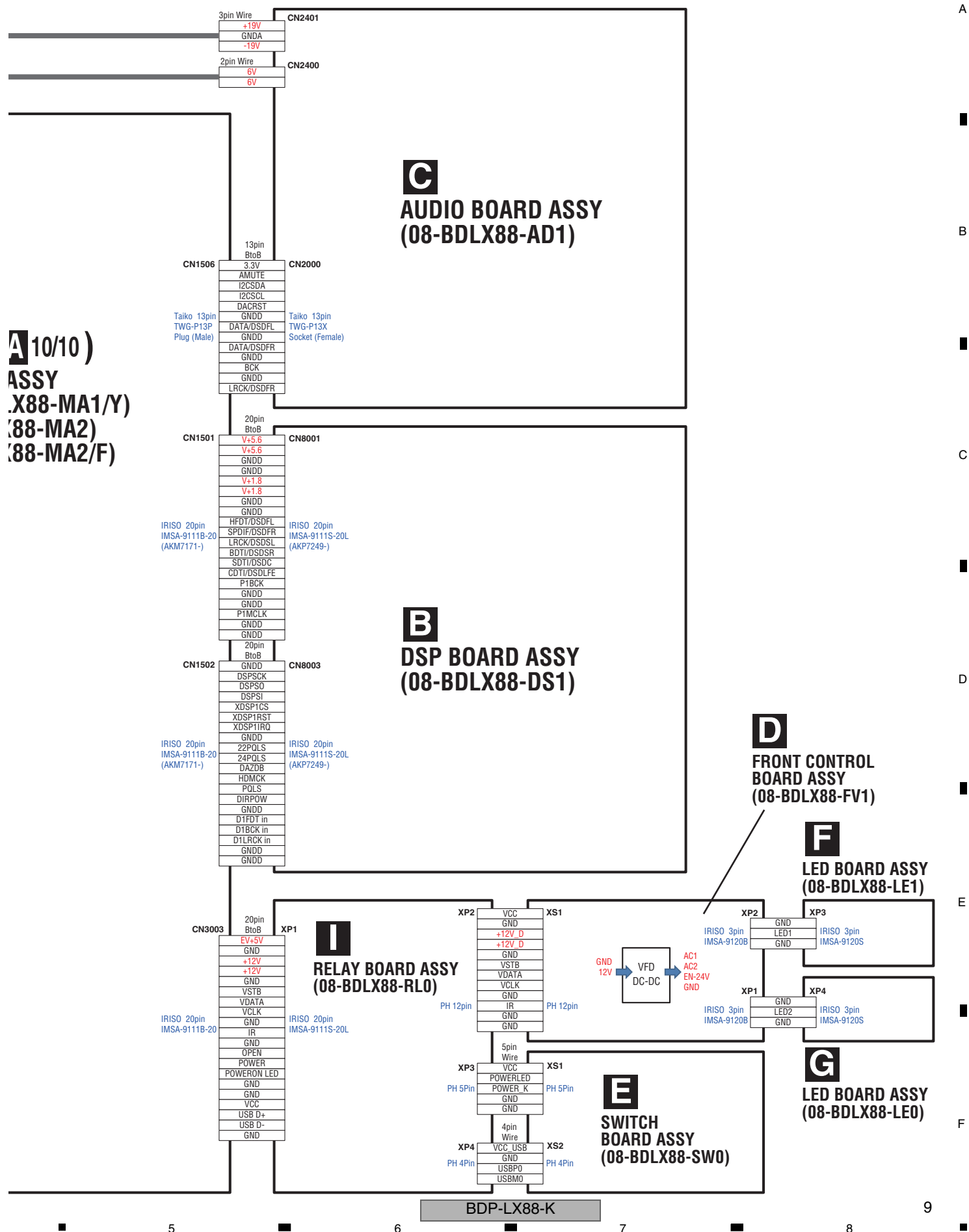
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
LIST OF ASSEMBLIES							
	1..	MAIN BOARD ASSY (YXE8)	08-BDLX88-MA1/Y		1..	LED BOARD ASSY	08-BDLX88-LE0
	1..	MAIN BOARD ASSY (LXE)	08-BDLX88-MA2		1..	RS BOARD ASSY	08-BDLX88-RS0
	1..	MAIN BOARD ASSY (FXE)	08-BDLX88-MA2/F		1..	RELAY BOARD ASSY	08-BDLX88-RL0
	1..	DSP BOARD ASSY	08-BDLX88-DS1		1..	POWER BOARD ASSY	08-BDLX88-PW2
	1..	AUDIO BOARD ASSY	08-BDLX88-AD1			BD LOADER	08-BDLX58-SH0
	1..	FRONT CONTROL BOARD ASSY	08-BDLX88-FV1	⚠		Audio trans (YXE8, LXE)	VTT1177
	1..	SWITCH BOARD ASSY	08-BDLX88-SW0	⚠		Audio trans (FXE)	VTT1176
	1..	LED BOARD ASSY	08-BDLX88-LE1				

4. BLOCK DIAGRAM

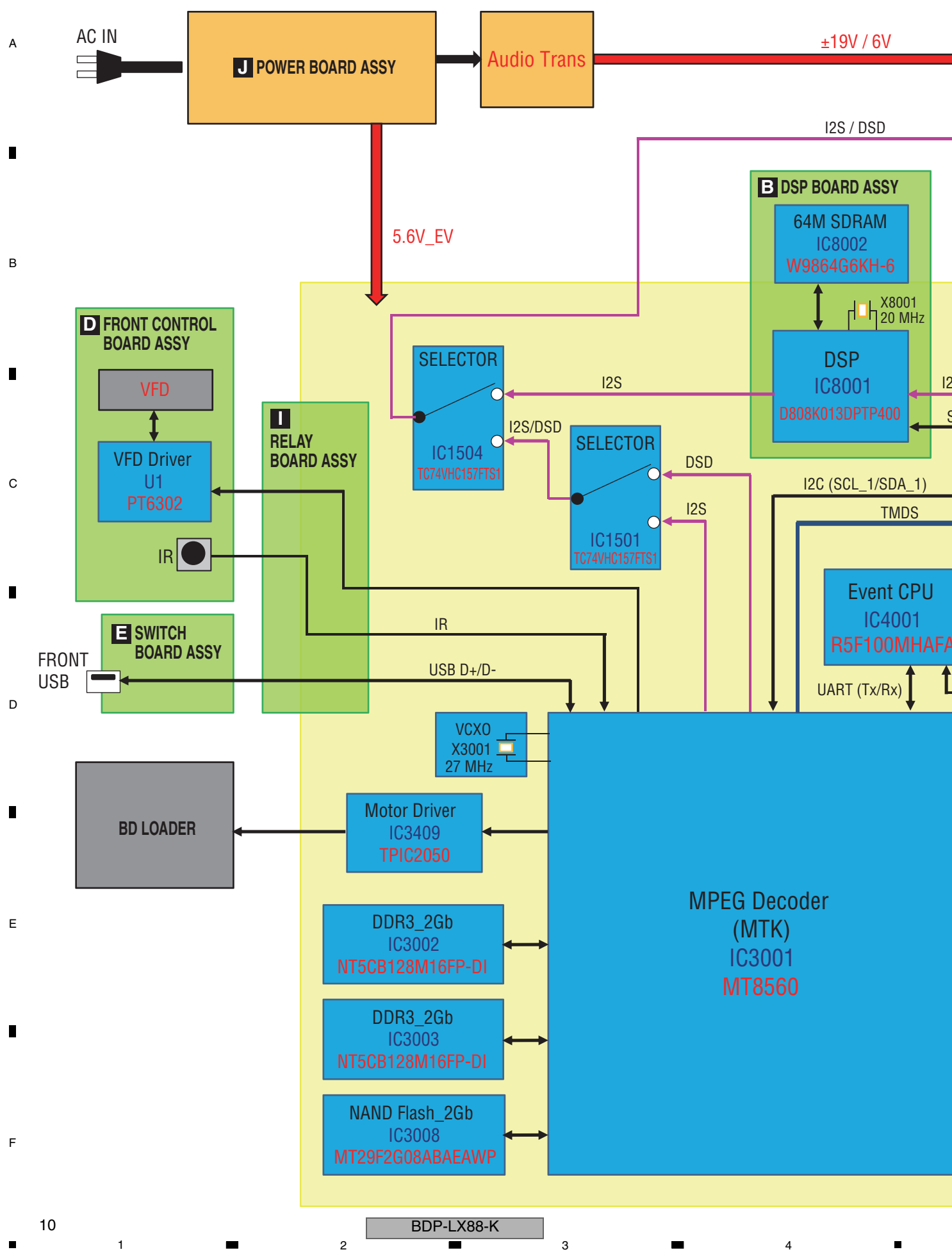
4.1 OVERALL WIRING DIAGRAM

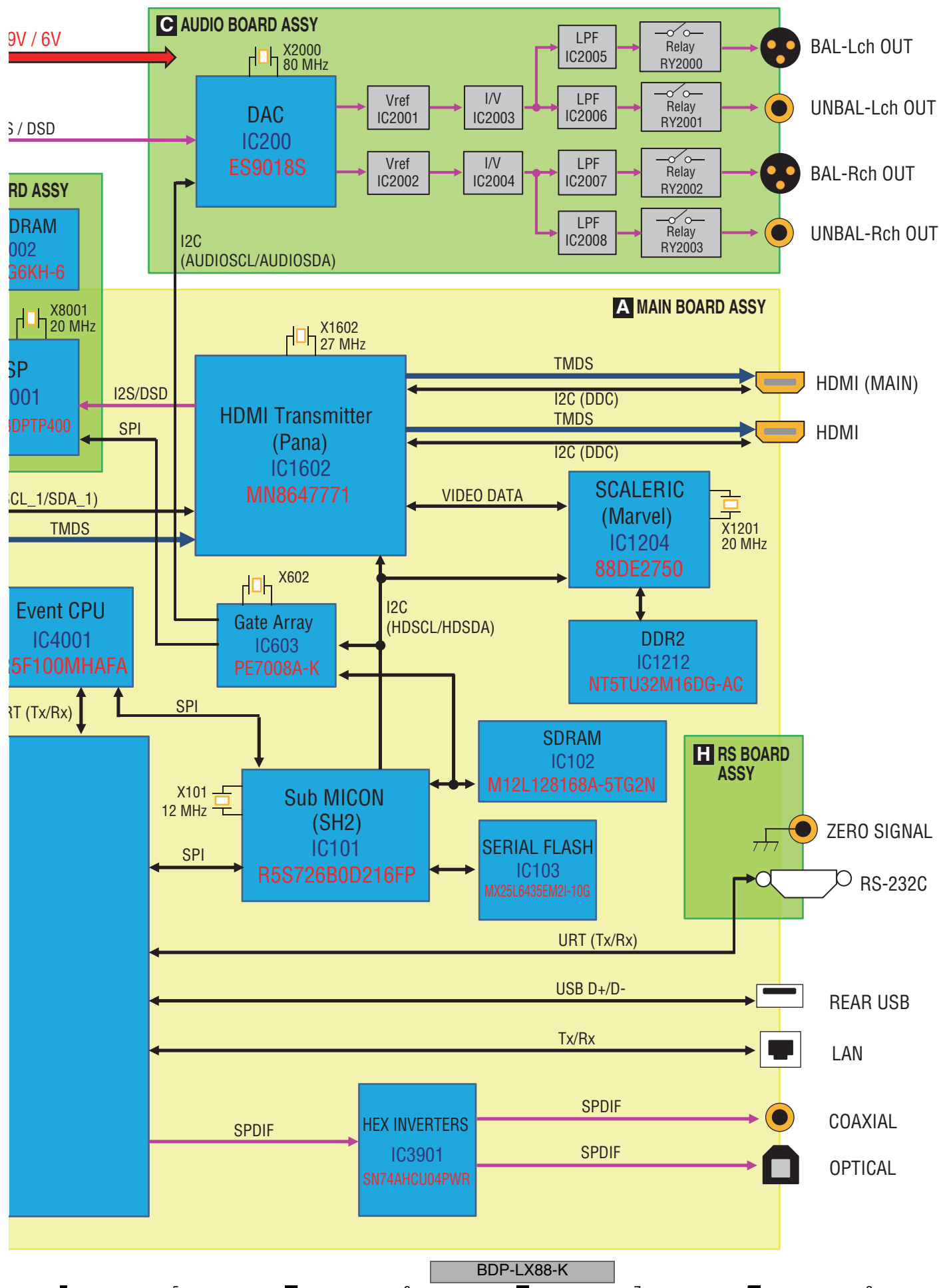


- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.



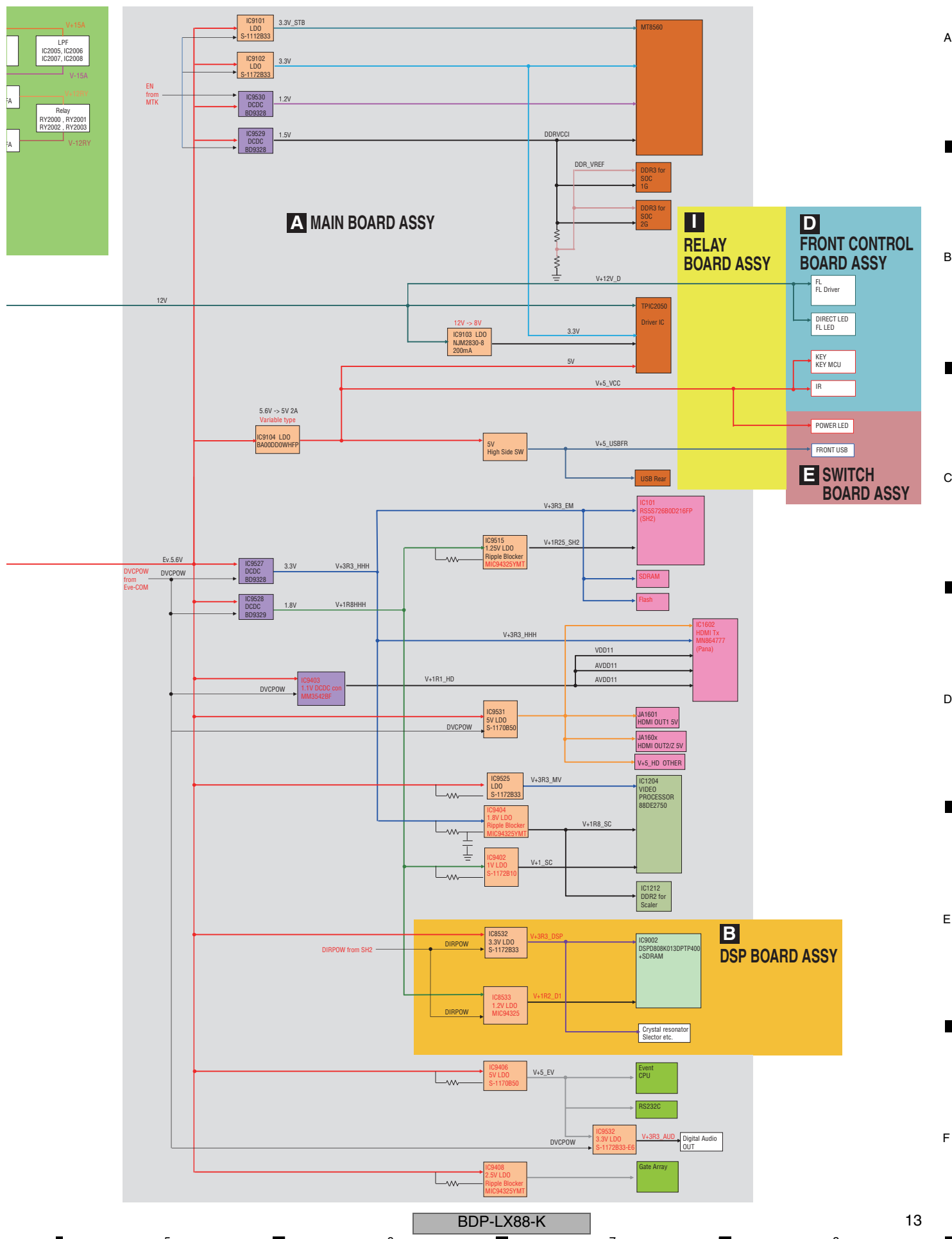
4.2 OVERALL BLOCK DIAGRAM





△

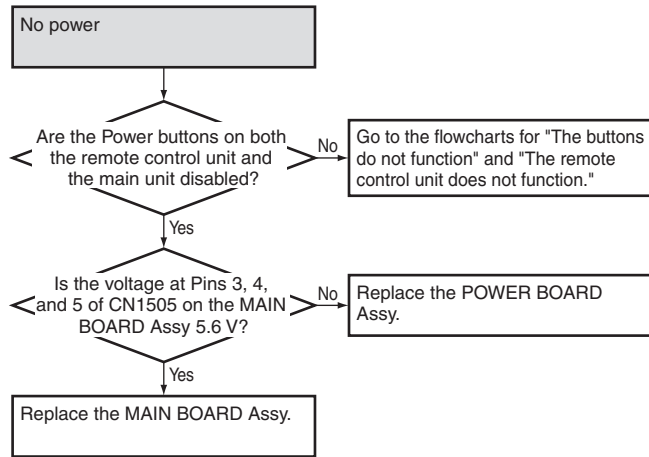




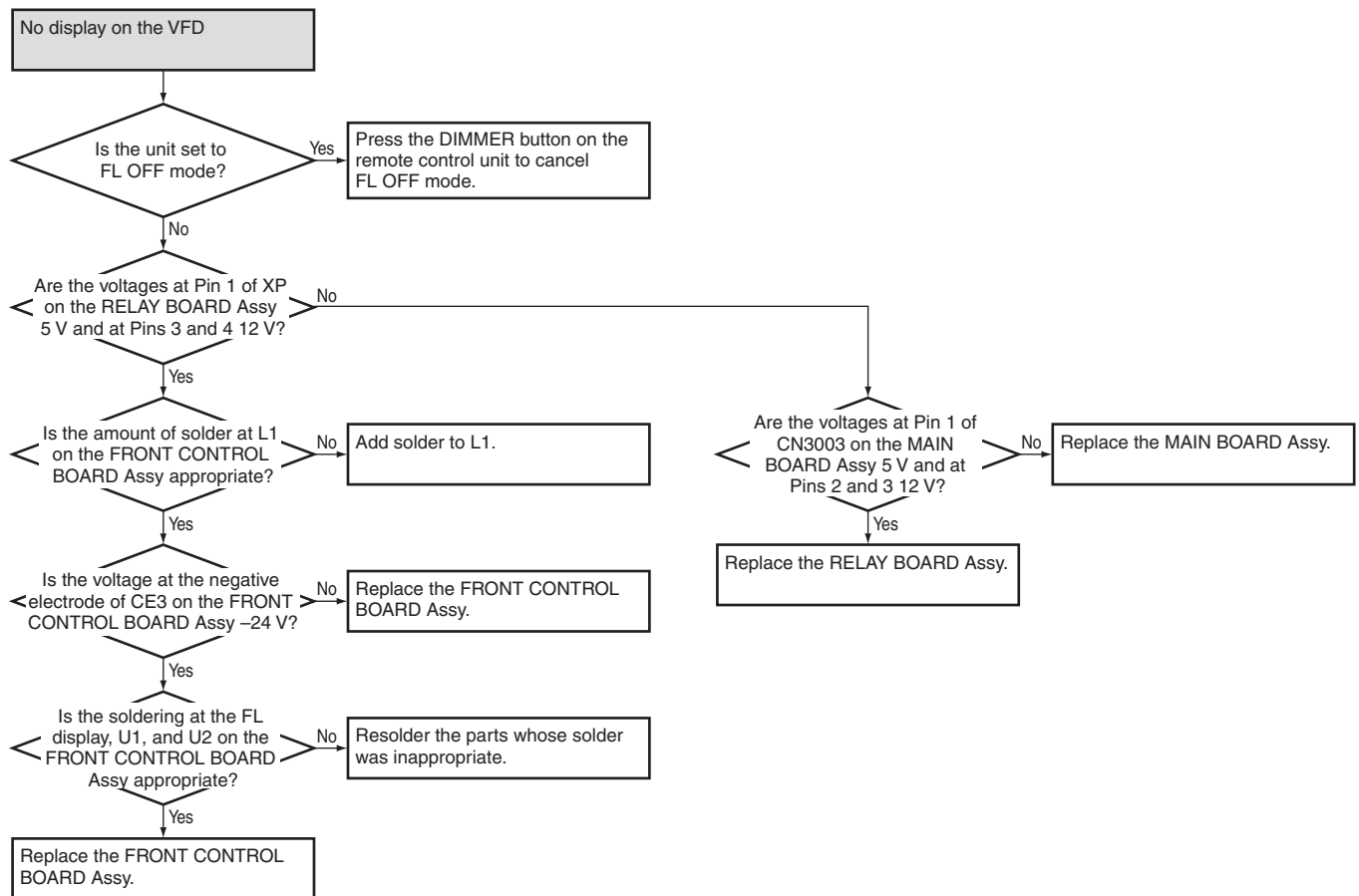
5. DIAGNOSIS

5.1 TROUBLESHOOTING

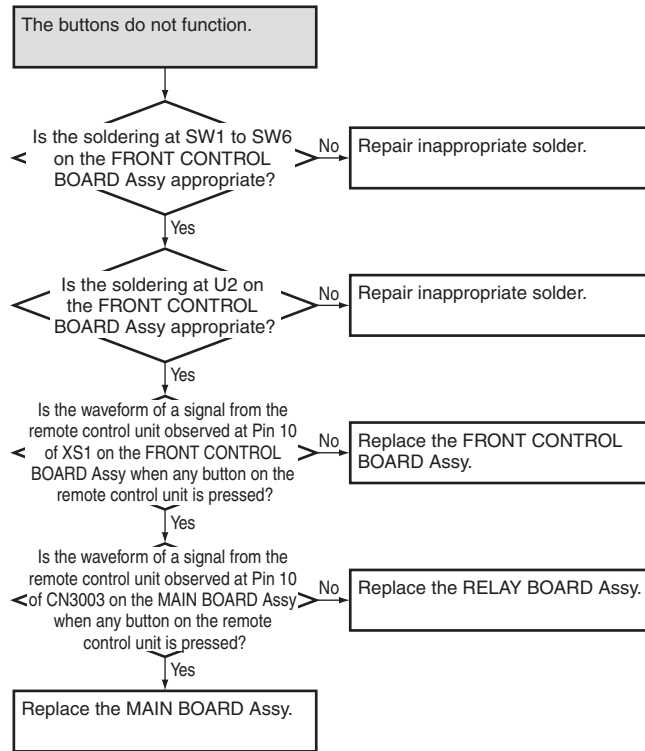
No power



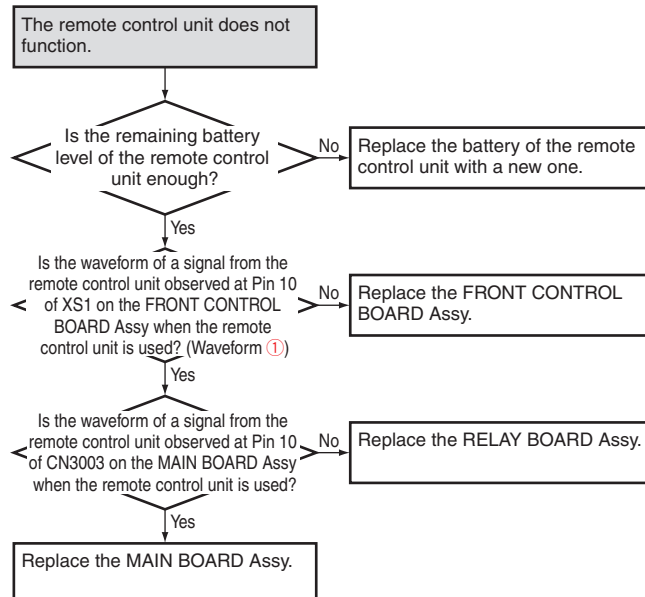
No display on the VFD



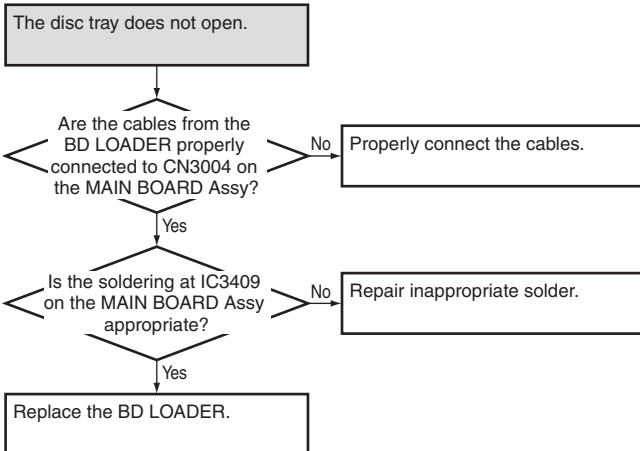
The buttons do not function.



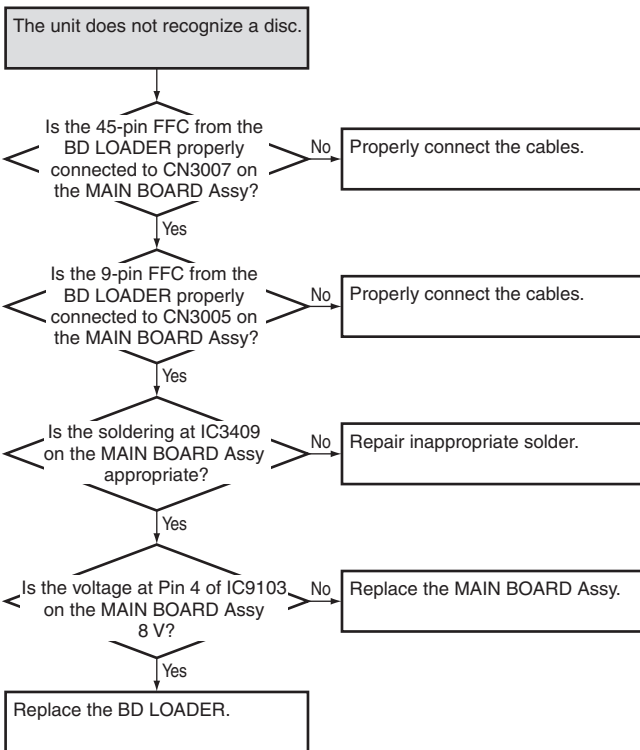
The remote control unit does not function.



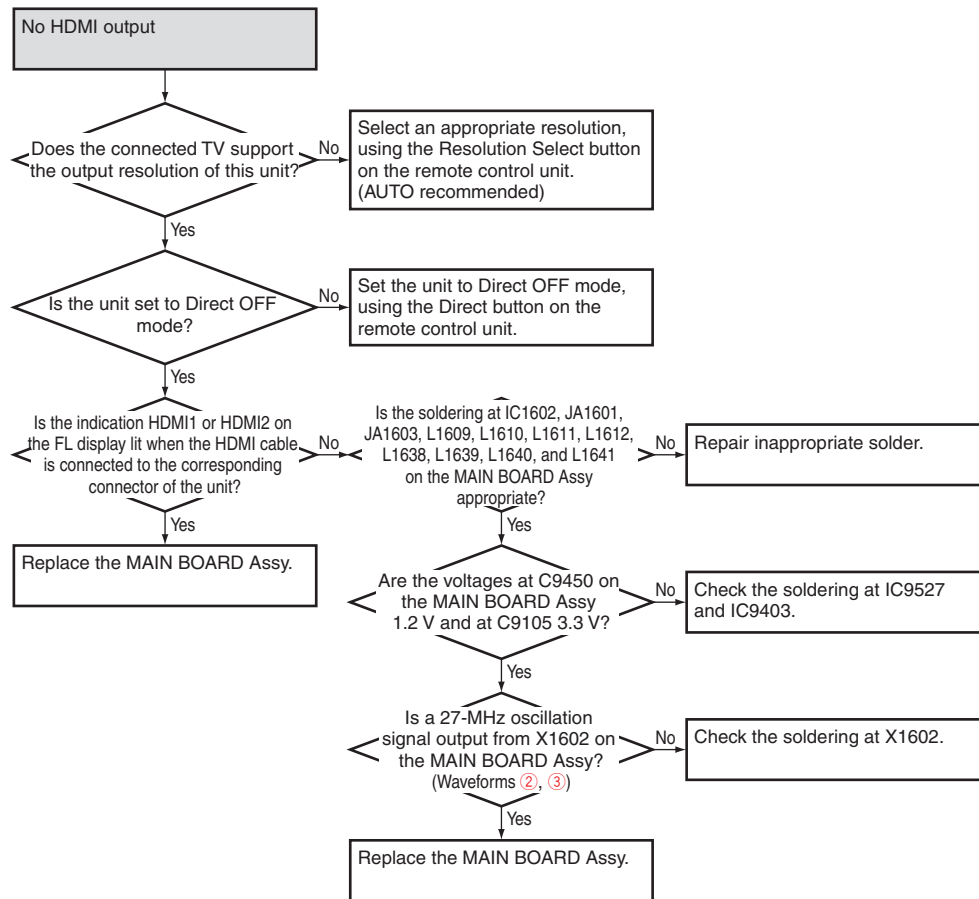
A The disc tray does not open.



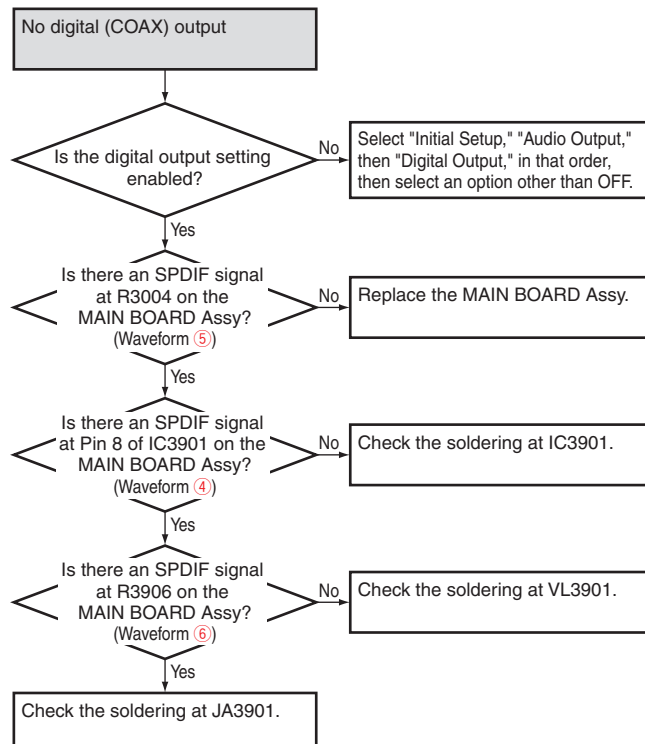
The unit does not recognize a disc.



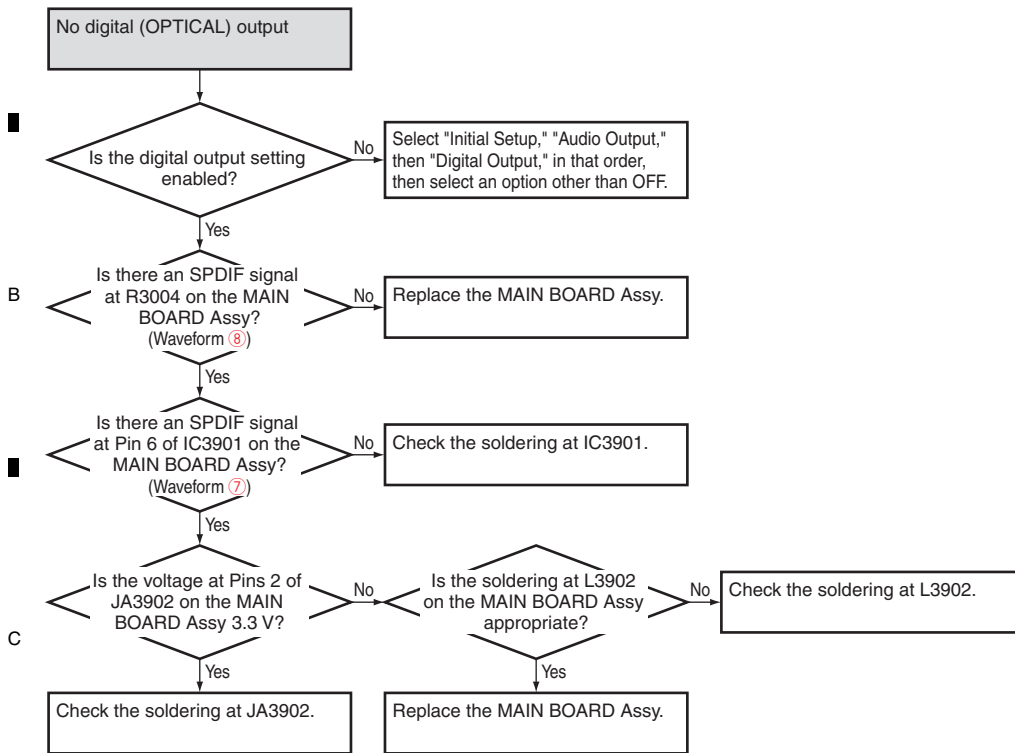
No HDMI output



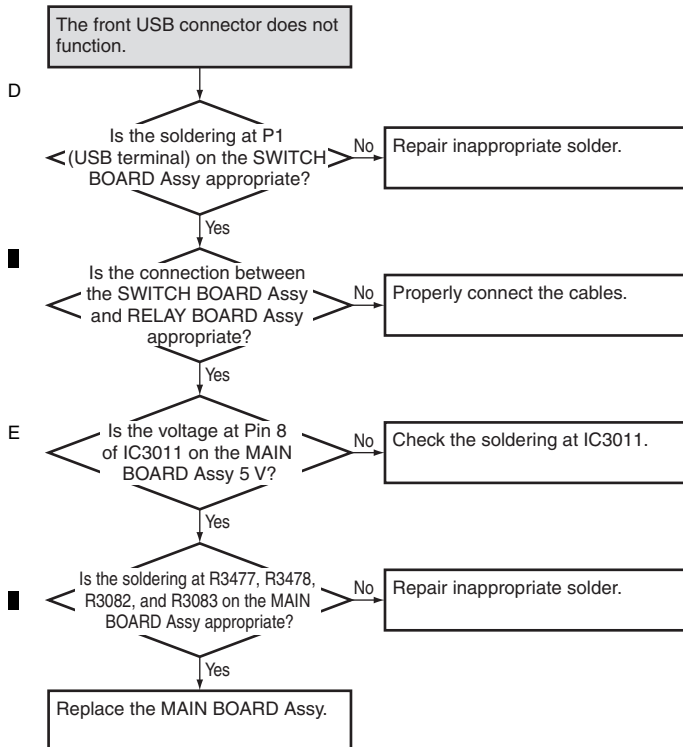
No digital (COAX) output



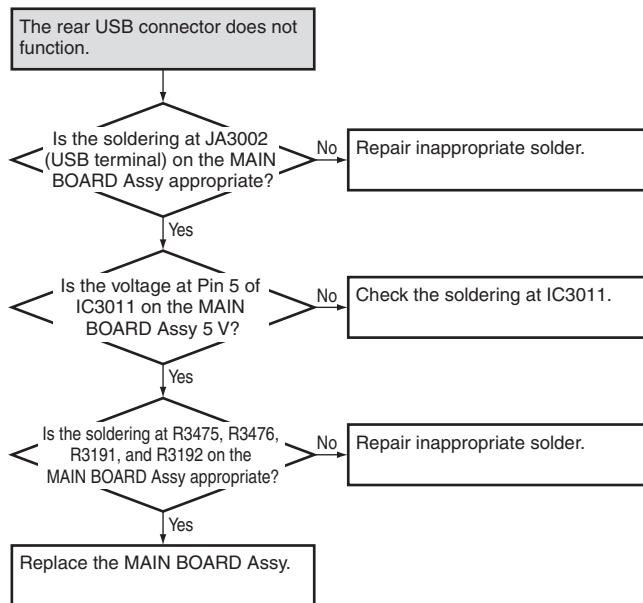
A No digital (OPTICAL) output



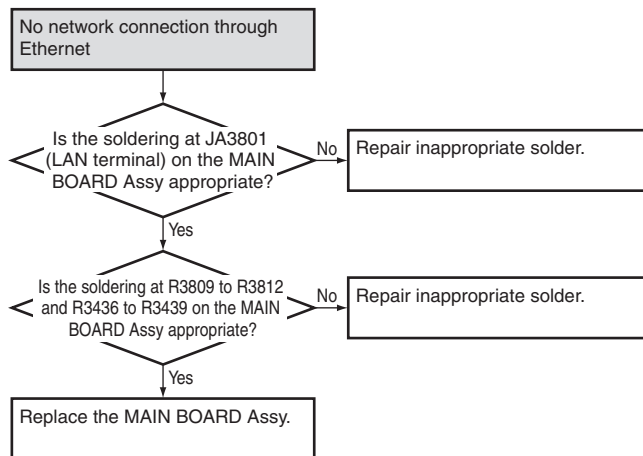
The front USB connector does not function.



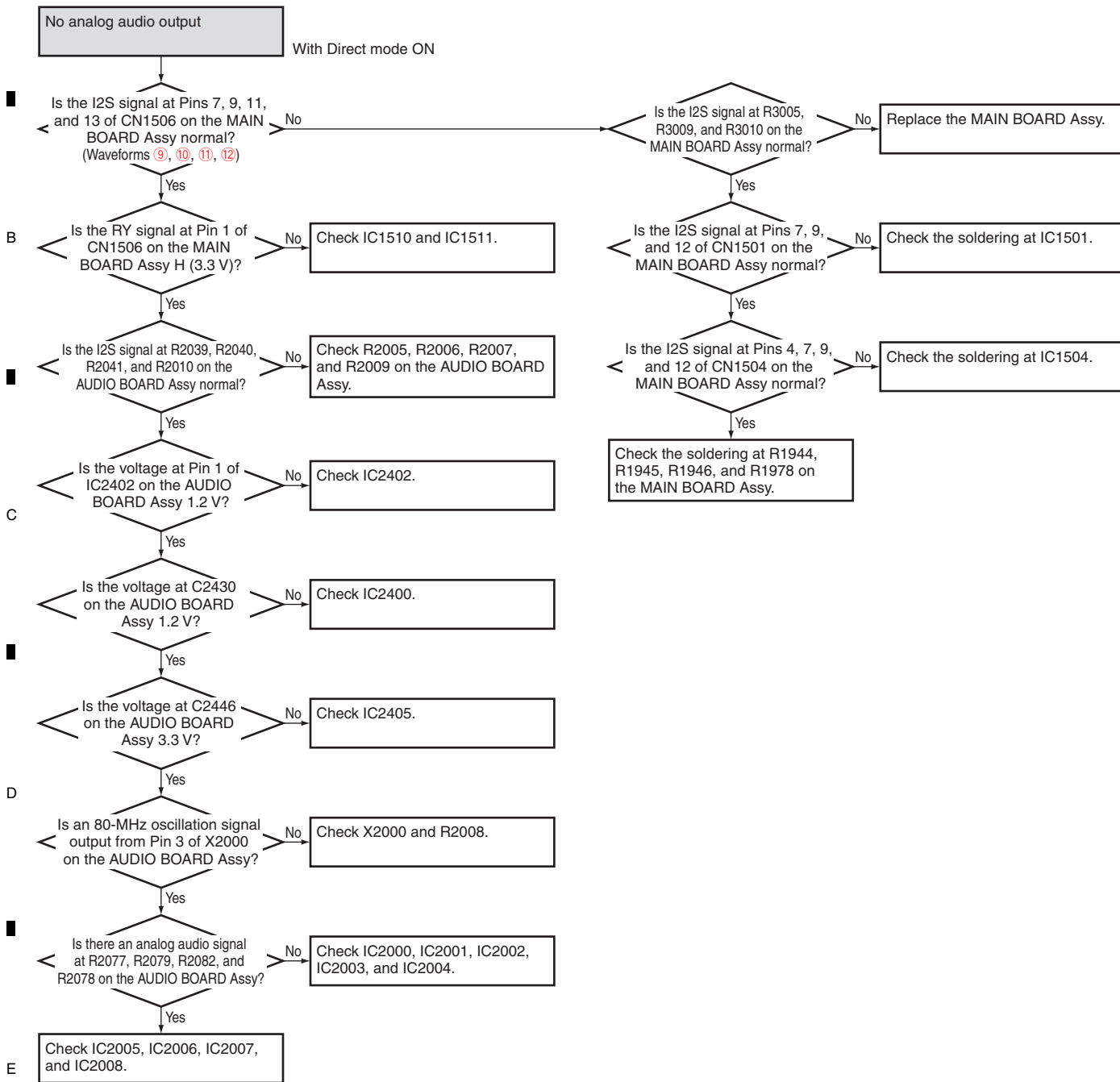
The rear USB connector does not function.



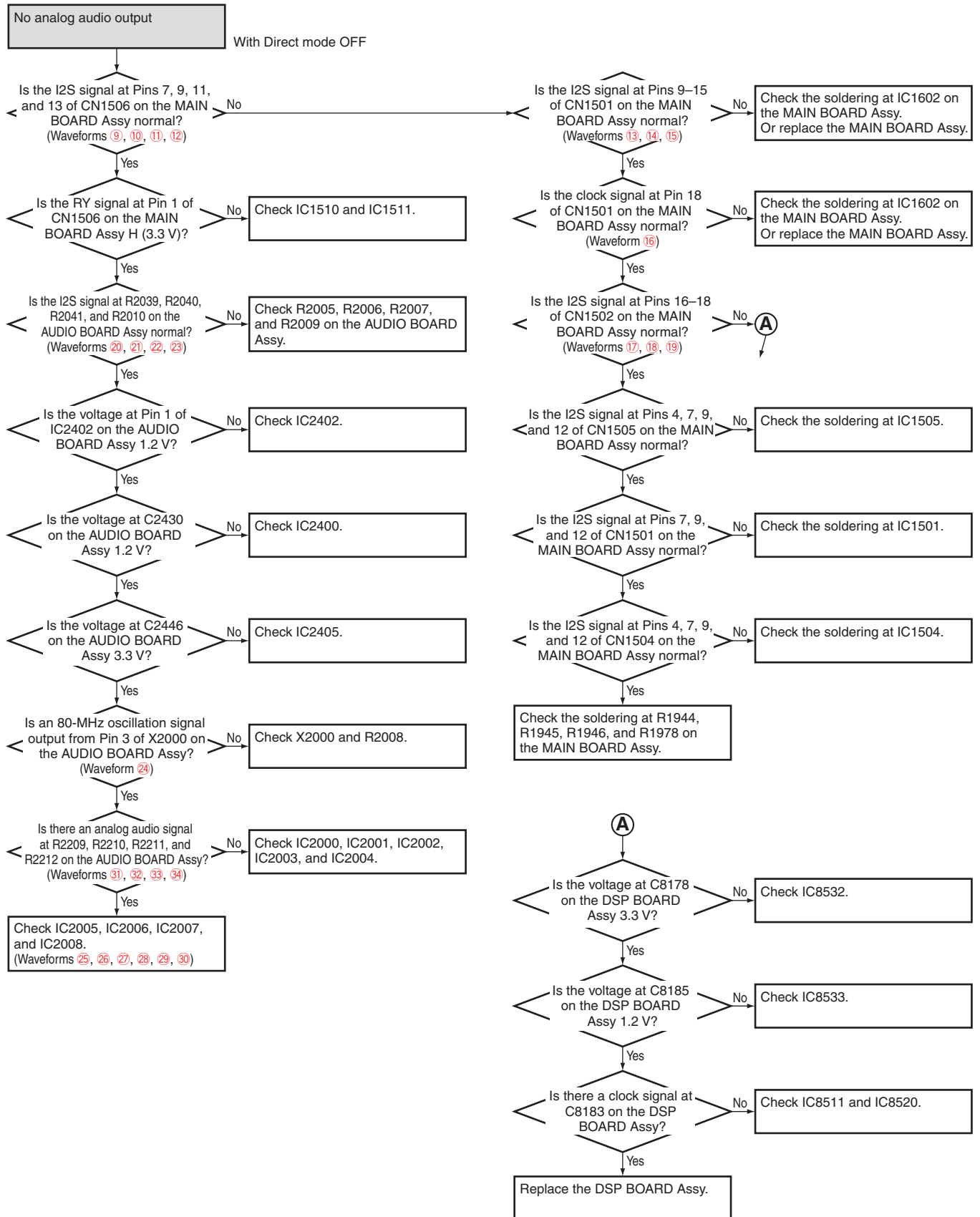
No network connection through Ethernet



A No analog audio output (with Direct mode ON)



No analog audio output (with Direct mode OFF)



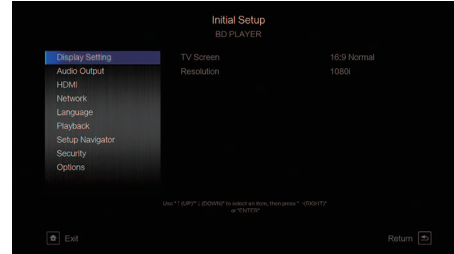
6. SERVICE MODE

6.1 SERVICE MODE

- A In Service Mode, there is a mixture of Design and Development, Production Line Menu and Service Menu. Here, menu items that are usable in Service and instructions are listed. Only use the menu explained in this document. Others are for Design and Product lines. Each item of Service mode can be quit by pressing the [STOP] button. However, to check operations such as normal playback, turn the unit OFF then back ON again.

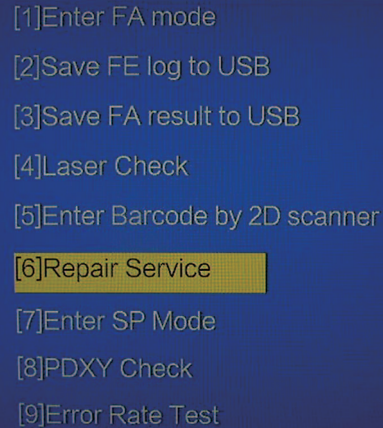
1. HOW TO ENTER SERVICE MODE

1. Press [HOME MENU] button on the remote controller and select "Initial Setup" from the home menu.



- B **Note:**
Be sure to set the display setting of the screen saver to "Off" before entering Service mode, because the unit will automatically quit Service mode once the screen saver is displayed.
If this setting is changed during repair, be sure to restore to the customer's original selection.

2. Pressing the number buttons on the remote control in the following order [5] → [1] → [7] → [7] will display the Menu screen.
(If it does not appear, slowly press the number keys with a 1 second interval.)



2. DESCRIPTION OF EACH ITEM

- [1] Enter FA mode
For the former model and will not be used to exchange this Loader.
- [2] Save FE log to USB
For Design and Development purposes and cannot be used for Service.
- [3] Save FA result to USB
For Design and Development purposes and cannot be used for Service.
- [4] Laser Check
Verifies laser diode. Refer to "Laser Check" for details.
- [5] Enter Barcode by 2D scanner
For Production line purposes and cannot be used for Service.
- [6] Repair Service
Implemented when exchanging the BD LOADER and MAIN BOARD Assy. Refer to "8.1 NECESSARY ITEMS FOR ADJUSTMENTS" for details.
- [7] Enter SP Mode
Mainly for Production Line, but some items can be used in Service. Please see "SP Mode" for details.
- [8] PDXY Check
Verifies misalignment of optical axis. Refer to "PDXY Check" for details.
- [9] Error Rate Test
Determine the error rate of the disc. Refer to "Error Rate Test" for details.

3. DETAILED DESCRIPTION OF ITEMS USED IN SERVICE

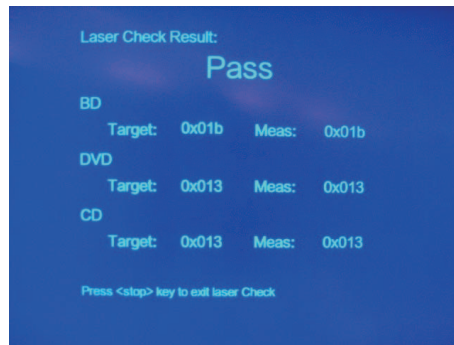
1. [4] Laser Check

Verifies the output value of each laser diode inside the pick-up area. Implement according to the following procedures.

- ① Select "[4] Laser Check" with the \downarrow button from the Service Mode screen and press the [ENTER] button.
(perform without disc in tray)
- ② After a few seconds, measurement and judgment results will be displayed, as shown below.
If all measurement (Meas) values are 1/3 or greater or less than triple the target values (hex), [Pass] will be displayed.
If any of the measurement values is out of this range, [NG] will be displayed.

Example BD

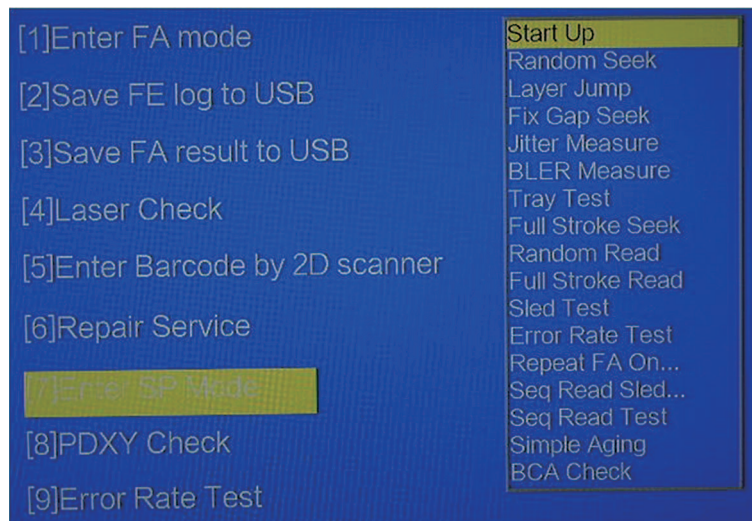
Target:	0x01b	Meas:	0x01b	OK
			$0x01b \times 3 = 0x051$	Meas is 0x051 or more : NG
			$0x01b \times 1/3 = 0x009$	Meas is 0x009 or less : NG



("0x" is simply to express the hex,
so it is not necessary in the calculation)

2. [7] Enter SP Mode

There are 17 items in the SP Mode, the main items being for Production line and Design/Development. The following is to explain items usable in Service. Other items require time for completion, or are not suited for Service purposes. If you select them by mistake, press the [STOP] button to end that item you accidentally selected.
(none of the items will affect the main unit)



A 2-1. Start Up

[Content of test]

Implements initial movement of the disc servo continuously. Implement the following process 20,000 cycles.

• Tray Close → • Focus ON → • TOC Read → • Tray Open



(1 cycle 15 seconds x 20000=completed in approx. 83 hours 20 minutes)

Can be implemented on all of CD, DVD, and BD. Cannot change disc during process.

[Instructions]

- B
- ① Select "[7] Enter SP Mode" with the ↓ button from the Service Mode screen, and press the [ENTER] button.
 - ② The SP Mode window menu will be displayed, so select "Start Up" and press the [ENTER] button.
 - ③ The tray will automatically open and the dedicated screen will appear. Place the disc you wish to use on the tray, and push it in manually. ([Close] button will not function)
 - ④ Start Up mode will be initiated, and count will start. Implement 20,000 times (4E20 in hex), and if no errors occur, "Pass" will appear.
- If errors do occur, they will be counted. Therefore, errors can be identified without finishing the process.

[Effective indications]

Tray sometimes does not open, discs sometimes are not recognized, discs sometime do not playback,
(When indications are related to discs, implement on the type of disc which has been pointed out.
If it is the disc on which the indications occurred, possibility of reoccurrence is higher.)

C 2-2. Jitter Measure / BLER Measure

[Content of test]

Measures the Jitter or the Block Error Rate (BLER) of the disc inserted.
Only Pass or NG will be displayed, not Measurement values.
All of CD, DVD, and BD can be judged.

[Instructions]

- D
- ① Select "[7] Enter SP Mode" with the ↓ button from the Service Mode screen, and press the [ENTER] button.
 - ② The SP Mode window menu will be displayed, so select either "Jitter Measure" "BLER Measure," and press the [ENTER] button.
 - ③ The tray will automatically open and the dedicated screen will appear. Place the disc you wish to use on the tray, and push it in manually. ([Close] button will not function)
 - ④ The tray will reopen automatically. Measurement will start when you push the tray in manually.
 - ⑤ When test is completed, "Pass" or "NG" is displayed.

[Effective indications]

Defect related to playback (blocked noise, sound jumping, image jumping, disc is paused, freeze of screen etc.)
If an NG is generated in a specific disc only, the defect is likely to be caused by the disc. If an NG is generated in other discs too, the defect is likely to be caused by the drive part.
However, even if Pass is displayed after this test, it is difficult to determine that the Driver is normal with these Pass judgments only.

2-3. Simple Aging

[Content of Test]

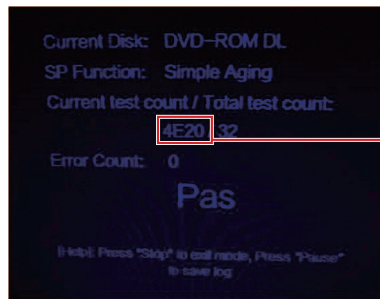
Performs random playback of disc randomly. Implement the following process 400 cycles.

- Tray close → • 50 times of short playback on voluntary points → • Tray open

1 cycle BD : 75 seconds x 400 times = Completed in a total of approx. 8 hours 20 minutes
 DVD : Approx. 90 seconds x 400 times = Completed in a total of approx. 10 hours
 CD : Approx. 95 seconds x 400 times = Completed in a total of approx. 10 hours 40 minutes

[Instructions]

- ① Select "[7] Enter SP Mode" with the ↓ button from the Service Mode screen, and press the [ENTER] button.
- ② The SP Mode window menu will be displayed, so select "Simple Aging" and press the [ENTER] button.
- ③ The tray will automatically open and the dedicated screen will appear. Place the disc you wish to use on the tray, and push it in manually. ([Close] button will not function)
- ④ The tray will reopen automatically. Aging will start when you push the tray in manually.
- ⑤ After aging is successfully finished, the screen shown below will be displayed.
 (The message "OK C3" will be displayed on the FL display.)



0x4E20 = 20000

(Fifty times of random playback multiplied by 400 cycles equals 20,000.)

Note1: DVD and BD disc can be checked with Single Layer (SL) disc only.
 If they are checked with Dual Layer (DL) disc, an Error is generated.

• Error List

The following serves as the Error List generated in SP MODE.

Error Code	Error Name	Description
12	PWR_CURVE_ERROR	Power curve chk-sum error
22	STARTUP_TIMEOUT_ERROR	Time-out criterion over
23	MEDIA_MISMATCH	Wrong disc
25	DISCID_ERROR 0x25	Disc ID error
26	MEDIUM_SUPPORT_ERROR	Unsupported disc
31	TRAYOUT_ERROR	Tray-out time-out criterion over
32	TRAYIN_ERROR	Tray-in time-out criterion over
33	FLASH_UPDATE_ERROR	Updating FA result failed
36	OPU_TEMP_ERROR	Abnormal OPU temperature
41	SEEK_TIMEOUT_ERROR	Seek time-out criterion over
42	SEEK_CMD_FAIL_ERROR	Seek command failed
51	READ_TOC_ERROR	Read TOC command failed
52	TOC_TIMEOUT_ERROR	TOC read time-out criterion over
61	PIPO_TIMEOUT_ERROR	Time-out criterion over
62	PIPO_C1C2_ERROR	Read PIPO command failed
63	PIPO_C1C2_OVER	PIPO criterion over
71	RD_CMD_FAIL_ERROR	Read command failed
72	RD_CMD_ERROR	Command error or illegality mode
73	RD_TIME_OUT_ERROR	Read command time-out criterion over
81	CHECK_FA_TABLE_ERROR	FA table check-sum error

A 3. [8] PDXY Check

For PDXY Check, the misalignment of pick-up optical axis can be checked.

The optical axis misalignments of X-axis and Y-axis are displayed "PDX" and "PDY" with %, respectively.

All of CD, DVD, and BD can be measured.

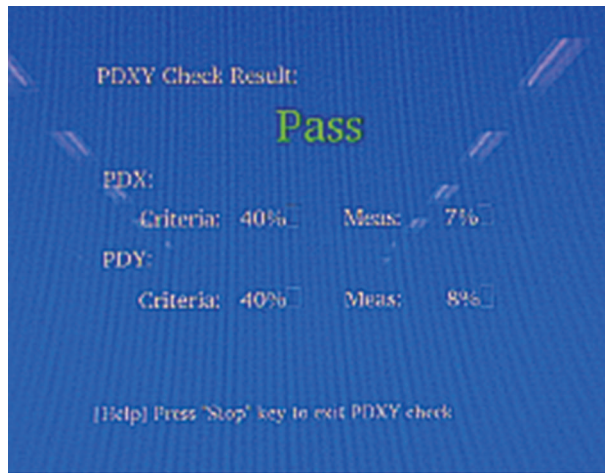
The method for calculating PDX and PDY is shown below.

$$\text{PDX} = ((A+B)-(C+D)) / (A+B+C+D)$$

$$\text{PDY} = ((A+D)-(B+C)) / (A+B+C+D)$$

[Instructions]

- ① Insert a disc (BD, DVD, CD) in a normal mode. If the playback starts, pause it.
Display the home menu and enter into the Service Mode.
In this mode, the measurement can be carried out at an arbitrary place. After a disc is inserted, play and stop the point you want to measure, and then enter into the Service Mode.
(The pickup position does not return even in this status. The measurement at the place is available.)
- ② Select "[8] PDXY Check" with the ↓ button from the Service Mode screen, and press the [ENTER] button.
- ③ After the measurement is started and completed, the measurement value is displayed. If the value is within the reference value, "Pass" is displayed.



- ④ Quit Service mode by pressing the [STOP] button. (The home menu screen will be displayed.)

Note:

If you open the tray in this state then attempt to play a disc, the "Close" indication is displayed on the FL display and playback will not start. To correct such a situation, turn the unit OFF then back ON again.

[Effective indications]

Defect related to playback (block noise, sound jumping, image jumping, disc is paused, freeze of screen etc.)

If an NG is generated in a specific disc only, the defect is likely to be caused by the disc. If an NG is generated in other discs too, the defect is likely to be caused by the pickup part. If the measurement value is very close to 40% even if an NG is not generated, the NG is likely to be caused by the disc.

4. [9] Error Rate Test

[Content of Test]

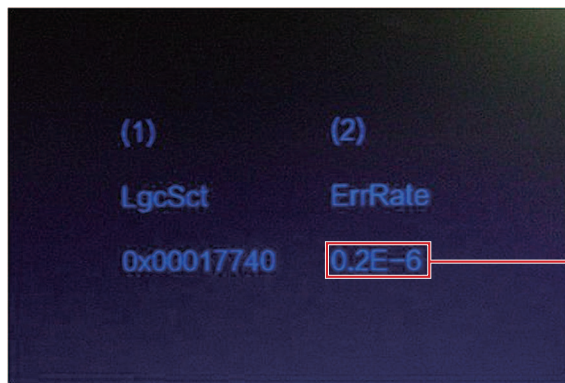
With the Error Rate Test, the error rate for a DVD or BD disc can be measured.

However, for a dual-layer (DL) disc, the error rate for the second layer cannot be measured. For measurement of the error rate of the second layer, use the necessary tools and application, referring to SKT13001B Service Knowhow manual.

[Instructions]

- ① On the Service mode screen, select "[9] Error Rate Test," using the ↓ button, then press the [ENTER] button.
- ② The tray will automatically open then the Error Rate Measurement screen will be displayed. Place a disc whose error rate is to be measured on the tray then manually push the tray in. (The [Close] button will not work.)
- ③ Measurement of the error rate will start.

- (1) Physical address of the disc
- (2) Error rate of the disc



The indication "x.xE-X" denotes the error rate.
Example: 3.5E-5 = 3.5×10^{-5}

- ④ After error-rate measurement is finished for the outermost track, measurement will be stopped then the tray will automatically open.
(For a DL disc, measurement will be stopped after that for the outermost track of the first layer is finished then the tray will automatically open.)

Note:

In Error Rate Measurement mode, if the AC power cord is unplugged with the tray open, the Error Rate Test will automatically start and the normal operation screen will not be displayed after the AC power cord is plugged again and the unit is turned ON.

In such a case, close the tray manually then press the [STOP] button to quit Error Rate Measurement mode.
(If the [STOP] button is pressed first, close the tray manually afterward to return to the Menu screen.)

- ⑤ Quit Service mode by pressing the [STOP] button.

A [OK/NG judgment]

Disc	Reference value
BD	1.0×10^{-3}
DVD	1.0×10^{-3}
CD	Error rate measurement not available

Notes:

1. Even if the values surpass 1.0×10^{-3} immediately after measurement starts, if they fall to be around the reference level several tens of seconds after, the pickup is probably OK.
2. Even with a normal pickup, the values may surpass 1.0×10^{-3} during short-time measurement (around 30 seconds), depending on the disc to be measured.
3. In rare cases, "0.0E-0" may be displayed for a moment. This is not a problem of the pickup.
4. If the measured error rates of a particular disc frequently surpass the reference value, that disc may have a problem. Compare the error-rate values of such a disc with those of another disc without any scratches or dirt for judgment. The examples of measured error rates when a test disc (GGV1368) is used are shown in the table below. (As there are more than a few variations in values across discs or BD players used, the results measured using the GGV1368 will not be completely the same. Use these values just for reference.)

LgcSct	Error rate	LgcSct	Error rate
0x0001FC80	4.72E-4	0X00032EA0	0.1E-6
0X00020DC	0.6E-6	0X00033FE0	0.2E-6
0X00021F00	0.1E-6	0X00035120	0.3E-6
0X000227A0	0.3E-6	0X00036260	0.0E-0
0X000238E0	0.1E-6	0X00036B00	0.4E-6
0X00025B60	0.6E-6	0X00037C40	1.4E-5
0X00026400	0.2E-6	0X00038D80	0.3E-6
0X00027540	0.4E-6	0X00039EC0	5.7E-5
0X00028F20	0.0E-0	0X0003A760	0.1E-6
0X0002A060	9.9E-5	0X0003B000	0.7E-6
0X0002B1A0	3.62E-4	0X0003C560	0.4E-6
0X0002C2E0	0.3E-6	0X0003CE00	1.3E-5
0X0002D860	1.1E-5	0X0003DF40	0.0E-0
0X0002E9A0	0.5E-6	0X0003F080	0.2E-6
0X0002FAE0	0.6E-6	0X000401C0	0.3E-6
0X00030380	0.0E-0	0X00040A60	0.6E-6
0X000314C0	0.1E-6	0X00041BA0	0.0E-0
0X00032600	0.1E-6	0X00042CE0	0.4E-6

For error-rate measurement of an entire DL disc (including that of the second layer), it is recommended to measure the error rate using a PC.

When a PC is used for measurement, measured error-rate values will be graphed, which makes this method suitable for error-rate measurement of an entire DL disc.

(For details on measurement, refer to the SKH14001 manual.)

E [Effective indications]

Failure in the playback system (block noise, interrupted sound, jumpiness of images, playback stopped in mid-course, frozen image, etc.)

Failure judgment of the pickup, by comparing the error rates before and after cleaning of the lens

7. DISASSEMBLY

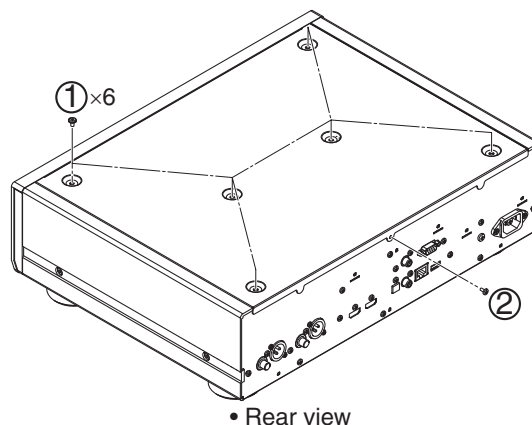
Note:

- (1) Do NOT look directly into the pickup lens. The laser beam may cause eye injury.
- (2) Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

[1] Exterior Section

• Top cover

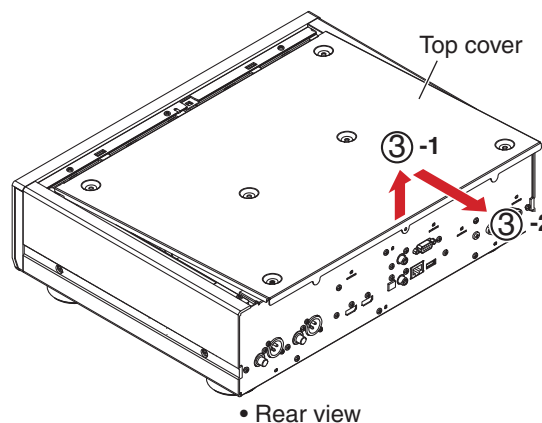
- (1) Remove the 6 HEX screws.
(Black model: 63-N40060-BF3)
(Silver model: 63-N40060-BF2)
- (2) Remove the 1 screw.
(IBZ30P060FCC)



- (3) Separate the top cover from the rear panel by wedging your finger tips between them then lift the top cover. Then detach the top cover by pulling it backward.

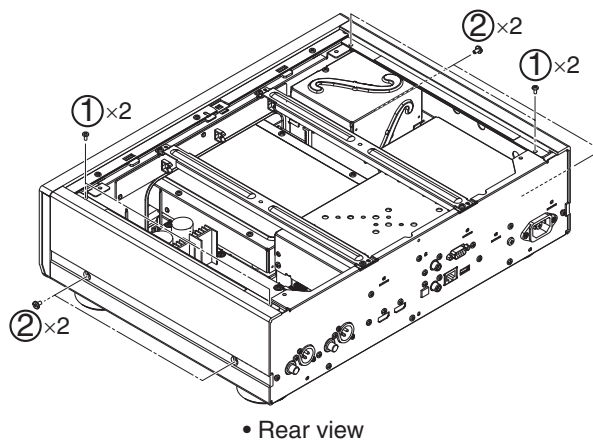
Note:

As the top cover is securely pressed into the front panel, detaching it will require a strong pull.



• Side panel

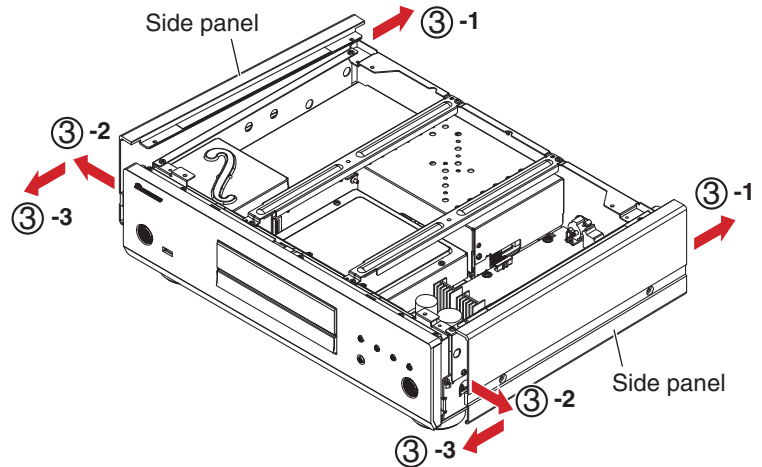
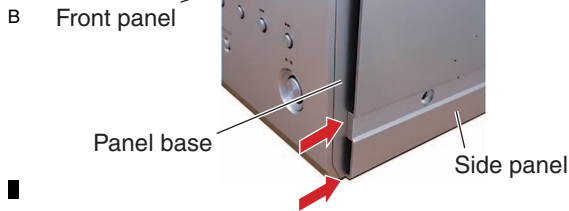
- (1) Remove the 4 screws.
(Black model: BBZ30P080FTB)
(Silver model: BBZ30P080FNI)
- (2) Remove the 4 HEX screws.
(Black model: 63-N40060-BF3)
(Silver model: 63-N40060-BF2)



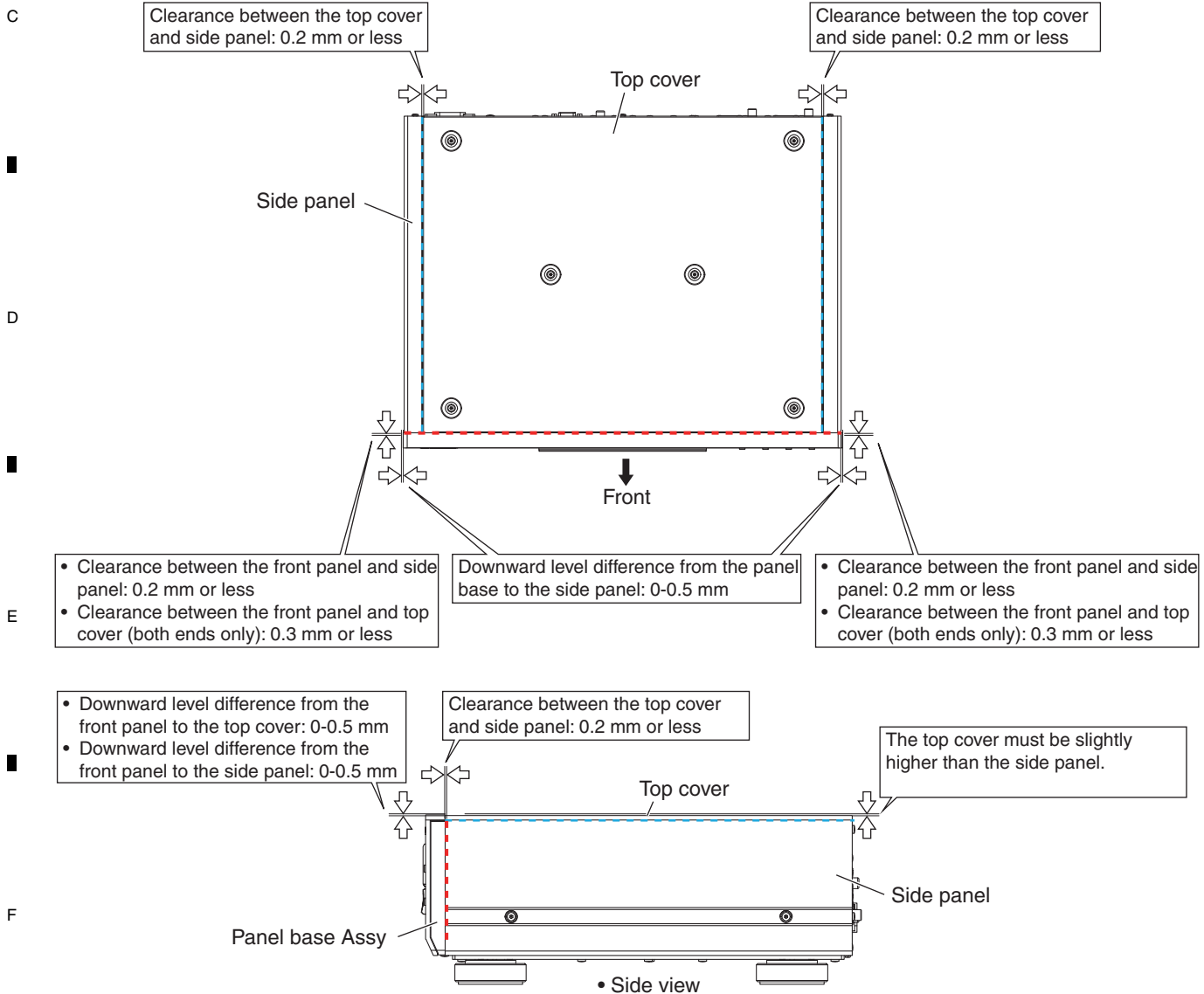
- A (3) Move the side panel toward the rear panel, grip the front side of the side panel to open it outward, then detach the side panel by pulling it toward the front panel.

Note:

When detaching the side panel, be careful not to damage the panel base or front panel with the side panel.



Guide of clearances and level differences during reassembly of Top cover and Side panel

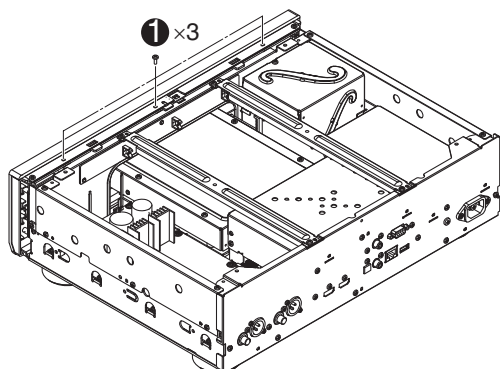


■ Notes on reassembly of the side panels and top cover

Care must be taken during reassembly of the side panels and the top cover when the three screws ① securing the front stay to the front panel were removed.

(Black model: BBZ30P080FTB)

(Silver model: BBZ30P080FNI)



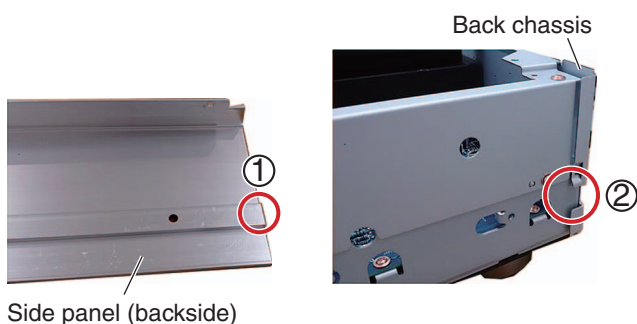
Because the front panel is inclined by approximately 1 degree downward toward the rear, gaps may be generated unless the side panels and top cover are carefully reassembled.

The front panel is inclined by approximately 1 degree.



How to reassemble is described in the following steps:
Attach the side panel so that a part ① of the side panel is inserted in a part ② of the rear panel.

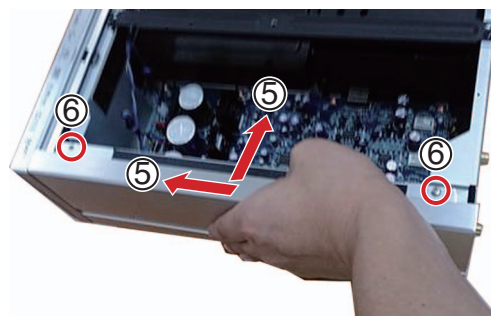
To do so, move the side panel toward the rear ③ then when it stops set the side panel down ④ on the inside of the product.



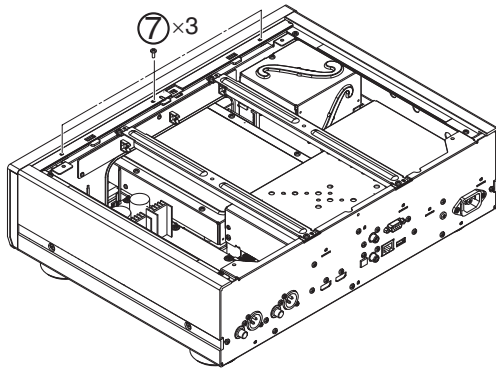
At this stage a large gap exists between the side panel and the front panel, as shown in the photo below.



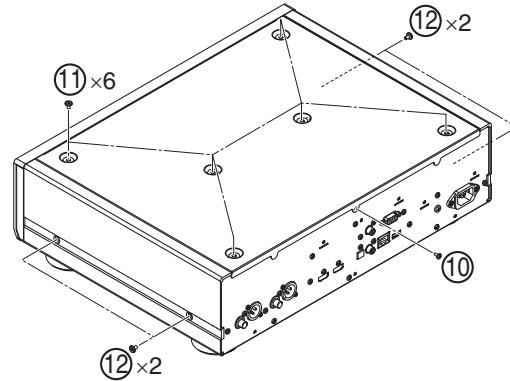
Therefore, tightening the screws as-is must be avoided. Tighten the two screws ⑥ while pushing the side panel toward the front side and inward ⑤.



- A After attaching the opposite side panel in the same manner, tighten the three screws for the front panel and the front stay ⑦.



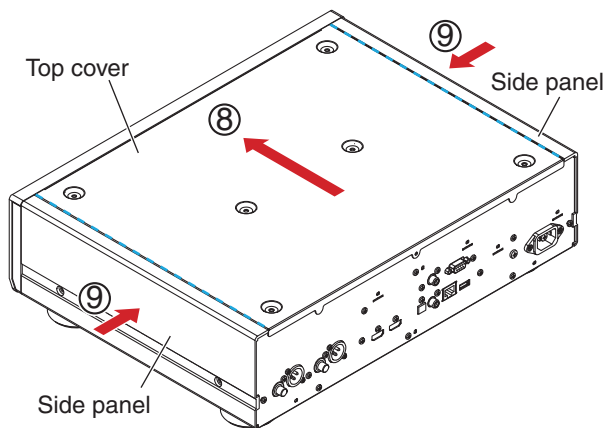
Tighten the screw on the rear panel ⑩ then tighten the six HEX screws on the top cover ⑪.
Tighten the four HEX screws on the both side panels ⑫.



Check that all the gaps and level differences between the front panel, top cover, and side panels are within the specified ranges.

C

Attach the top cover ⑧. Push the top cover toward the front panel so that the gap between them becomes 0.3 mm or less. If the gap between the top cover and the side panel is large, push the side panel toward the inside ⑨ so that the gap between them becomes 0.2 mm or less.







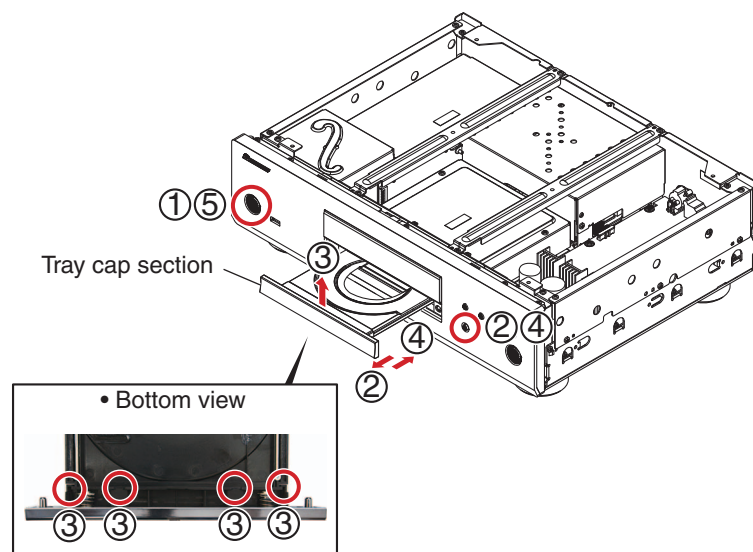
Clearance between the top cover and side panel
: 0.2 mm or less



Clearance between the front panel and top cover
: 0.3 mm or less

[2] Tray cap Section

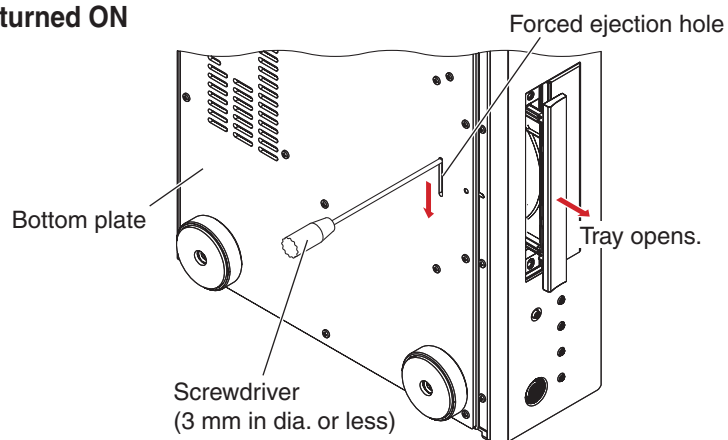
- (1) Press the  STANDBY/ON button to turn on the power.
- (2) Press the  button to open the tray.
- (3) Remove the Tray cap section by removing the 4 hooks.
- (4) Press the  button to close the tray.
- (5) Press the  STANDBY/ON button to turn off the power.



• How to open the tray when the unit cannot be turned ON

Insert a screwdriver or tweezers of 3 mm or less in dia. into the forced ejection hole on the bottom plate then slide it in the direction of the arrow, as indicated in the figure.

When the tray pops out a little, pull it manually.

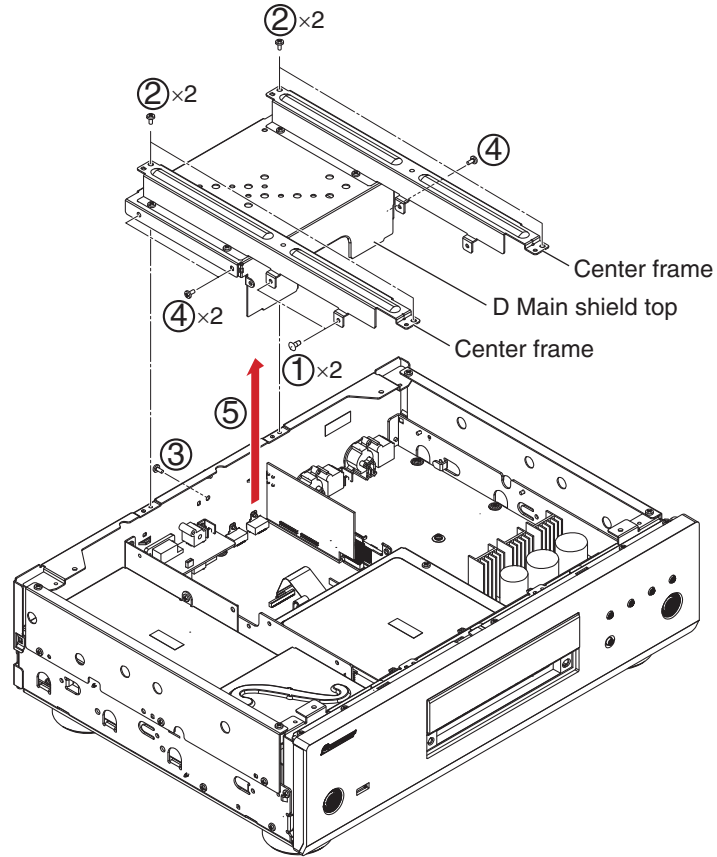


A [3] BD LOADER

- Remove the Top cover and 2 Side panels.
(See "[1] Exterior Section".)
- Remove the Tray cap section.
(See "[2] Tray cap section".)

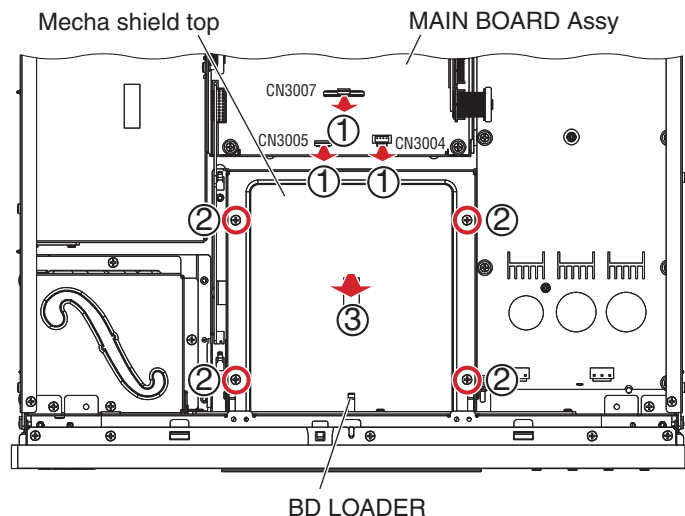
• Center frame and D Main shield top

- (1) Remove the 2 rivets.
- (2) Remove the 4 screws.
(BBZ30P080FTB)
- (3) Remove the 1 screw.
(IBZ30P060FCC)
- (4) Remove the 3 screws.
(BBZ30P080FTB)
- (5) Remove the 2 Center frames and D Main shield top.

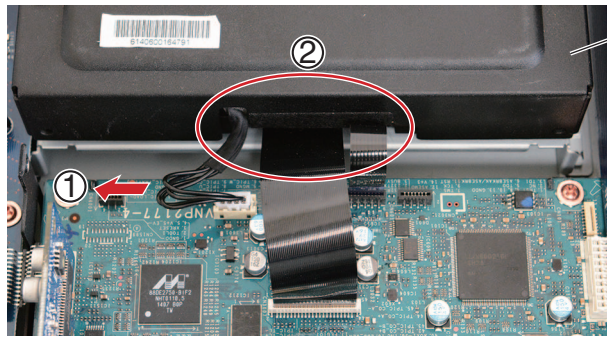


• BD LOADER

- (1) Disconnect the 2 flexible cables and 1 connector.
(CN3004, 3005, 3007)
- (2) Remove the 4 screws.
(BBZ30P080FTB)
- (3) Remove the Mecha shield top.



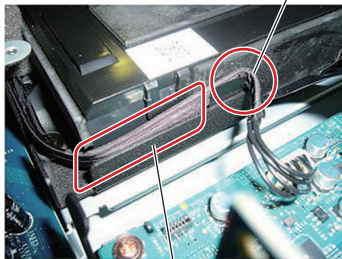
• Dressing Cables of the BD LOADER Assy



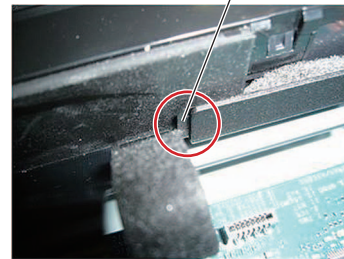
Mecha shield top

- ① Dress the cables of the 4P connector Assy so that they are located as far as possible from the FFC.
- ② Be careful that the 4P connector Assy and FFC are not pinched by the Mechanical Shield top.

Bend the cables around the edge of the FFC spacer.



FFC spacer

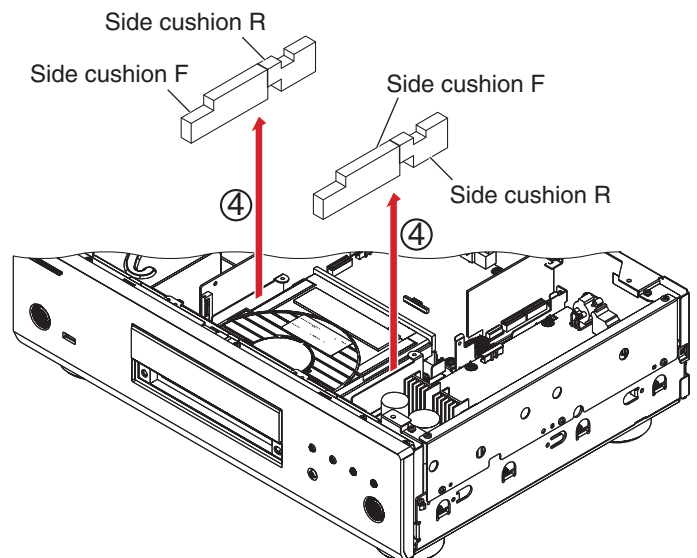


Fit the cables into the gap between the BD LOADER and the Mecha shield bottom.

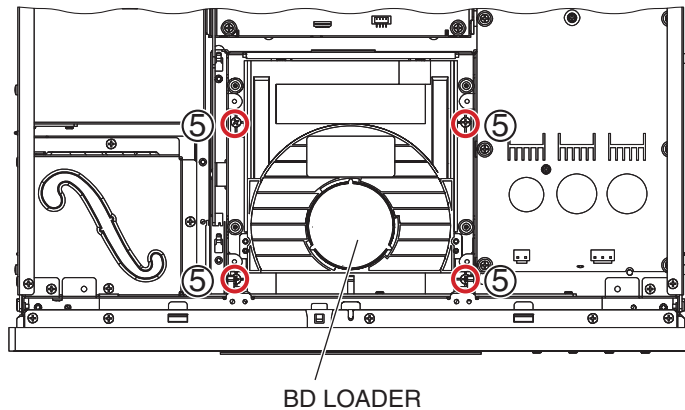
After replacing the BD LOADER, fit the cables of the 4P connector Assy into the gap between the BD LOADER and the Mecha shield bottom, as shown in the photo above, then dress the cables so that they are bent around the edge of the FFC spacer.

After the BD LOADER is detached for replacement, reattach the BD LOADER so that the FFC spacer can be seen.

- (4) Remove the 2 Side cushion F and 2 Side cushion R.

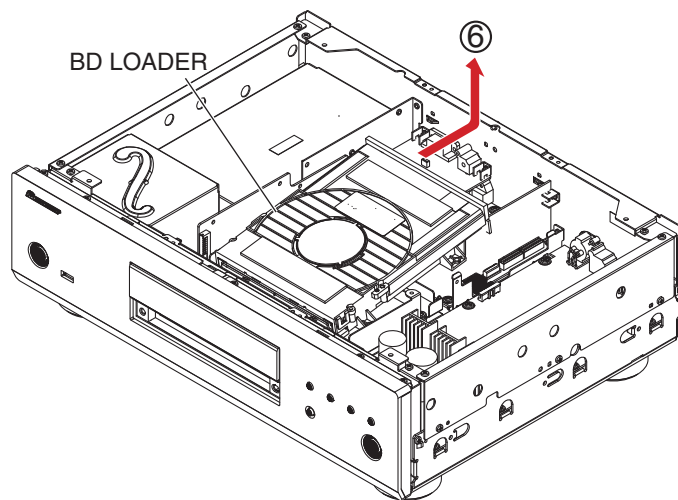


- A (5) Remove the 4 screws.
(BBZ30P080FTB)



B

- (6) Remove the BD LOADER.

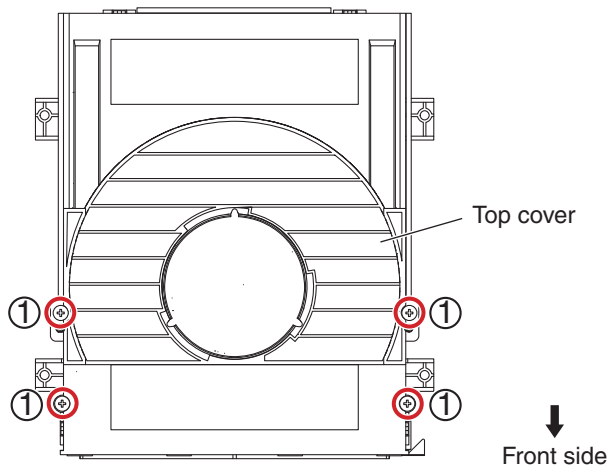


C

D

Lens Cleaning and Replacement of the Rubber Belt

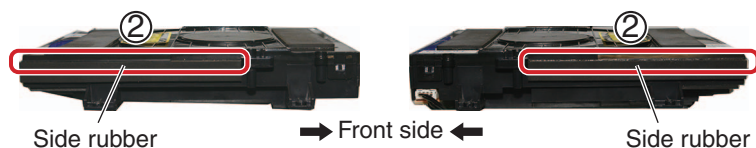
- (1) Remove the 4 screws.



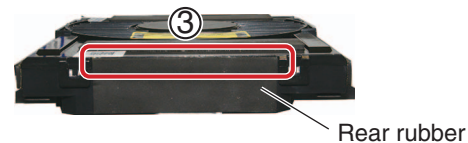
E

F

- (2) Peel off only the upper parts of the two side-rubber tapes, one on each side of the BD LOADER. (Don't peel off the entire surface of a side-rubber tape. Only peel off the parts that are glued to the top cover of the BD LOADER.)



- (3) Peel off only the upper part of the rear-rubber tape that is glued to the rear of the BD LOADER.



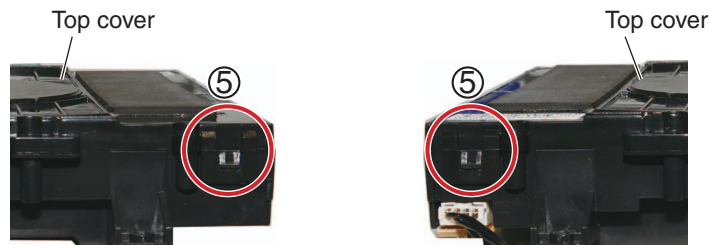
• Rear view

- (4) Unhook the hooks on the rear of the BD LOADER, using a screwdriver or similar tool. (Unhooking is not possible when the entire surface of the rear-rubber tape is glued.)



• Rear view

- (5) Unhook the two hooks, one on each side of the BD LOADER, in the same manner then remove the top cover.



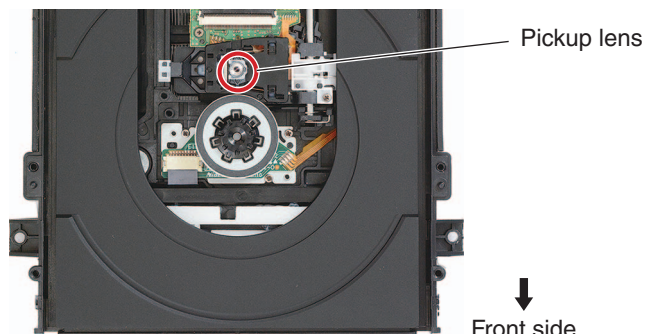
→ Front side ←

- (6) Cleaning of the pickup lens becomes possible in this state.



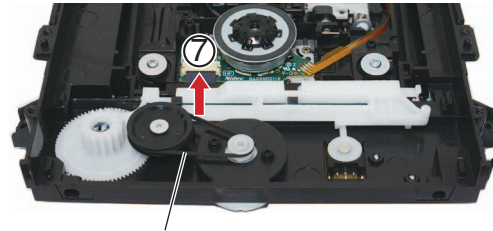
Clean the pickup lenses when it is stained, using the following cleaning materials:

Cleaning liquid : GEM1004
Cleaning paper: GED-008



Front side

- A (7) Remove the tray to change the rubber belt.
(As the tray has no holddown in this state, it can be pulled upward. When returning the tray back, place it without changing the Loader position.)



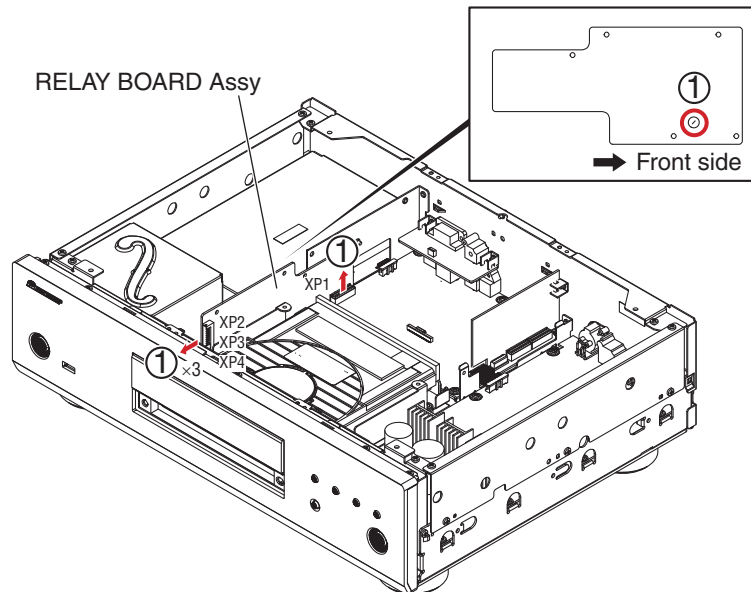
Rubber belt



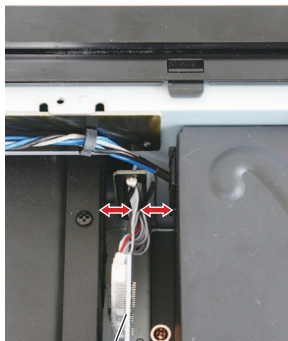
[4] RELAY, DSP and MAIN BOARD Assemblies

- Remove the Top cover and 2 Side panels.
(See "[1] Exterior Section".)
- Remove the 2 Center frames and D Main shield top.
(See "[3] BD LOADER".)

- C (1) Remove the RELAY BOARD Assy by disconnect the 3 connectors, 1 BtoB connector and remove the 1 rivet.
(XP1 to 4)



- Cable dressing between the FRONT CONTROL BOARD Assy/SWITCH BOARD Assy and the RELAY BOARD Assy

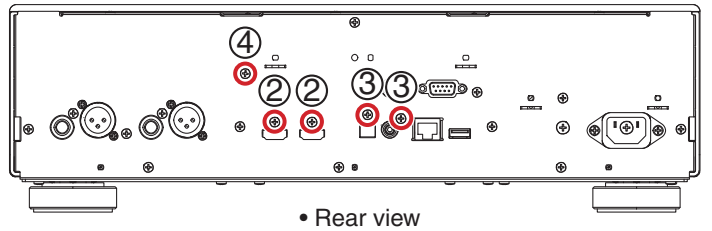


RELAY BOARD Assy

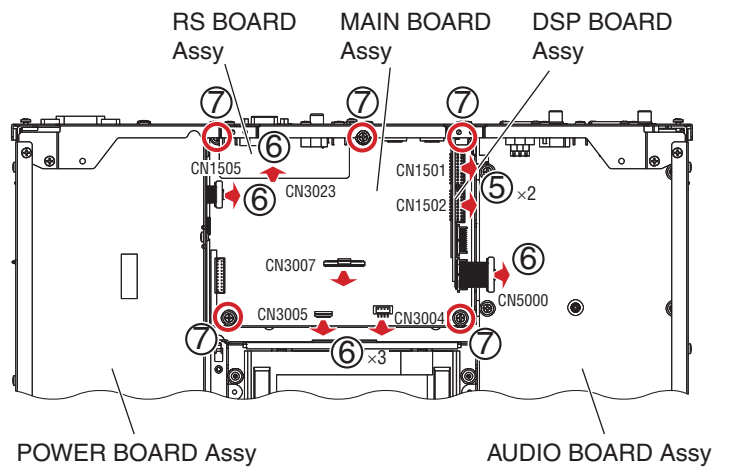
- Secure sufficient distances between the cables and metallic parts.



- (2) Remove the 2 screws.
(64-T30040-103)
- (3) Remove the 2 screws.
(BBZ30P080FTB)
- (4) Remove the 1 screw.
(IBZ30P060FCC)



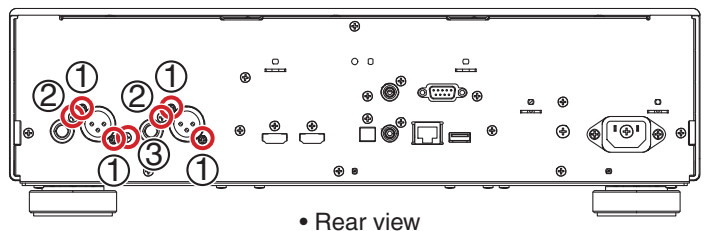
- (5) Remove the DSP BOARD Assy by disconnecting the 2 BtoB connectors.
(CN1501, 1502)
- (6) Disconnect the 2 bridge connectors, 3 flexible cables and 1 connector.
(CN1505, 3004, 3005, 3007, 3023, 5000)
- (7) Remove the MAIN BOARD Assy by removing the 5 screws.
(IBZ30P060FCC)



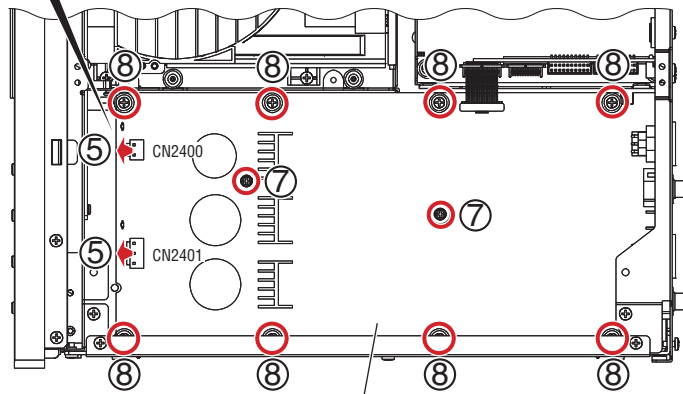
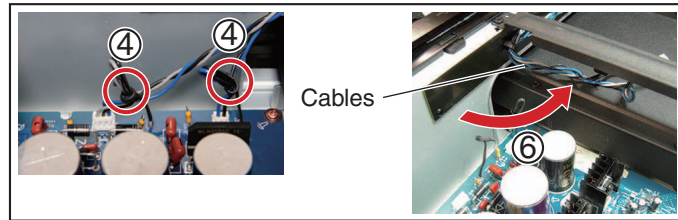
[5] AUDIO BOARD Assy

- Remove the Top cover and 2 Side panels.
(See "[1] Exterior Section".)

- (1) Remove the 4 screws.
(BBZ30P080FTB)
- (2) Remove the 2 screws.
(BBZ30P100FCC)
- (3) Remove the 1 screw.
(IBZ30P060FCC)



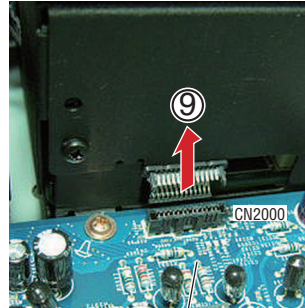
- A
- (4) Release the 2 jumper wires.
 - (5) Disconnect the 2 connectors.
(CN2400, 2401)
 - (6) Move the cables from the transformer to the drive side so that they will not hamper removal of the Assy.
 - (7) Remove the 2 screws.
(64-W30060-105)
 - (8) Remove the 8 screws.
(IBZ30P060FCC)



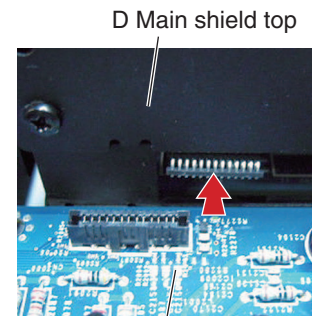
AUDIO BOARD Assy



- D
- (9) Disconnect the bridge connector.
(CN2000)
The disengaged connector must be retracted to the depressed area of the D Main shield top, as shown in the photo on the right. If you leave the disengaged connector as it is, the AUDIO BOARD Assy cannot be removed.
(If you forcibly pull out the Assy, the bridge connector may be damaged.)



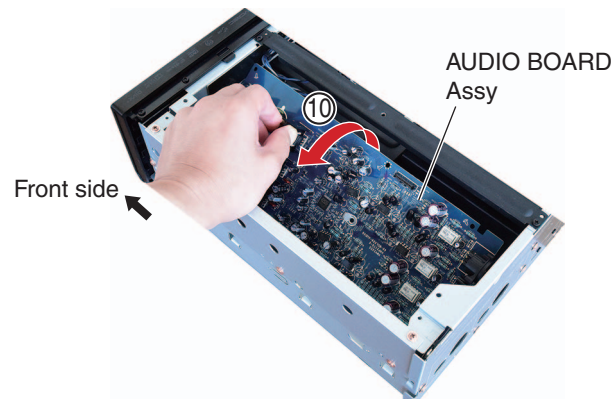
AUDIO BOARD Assy



AUDIO BOARD Assy

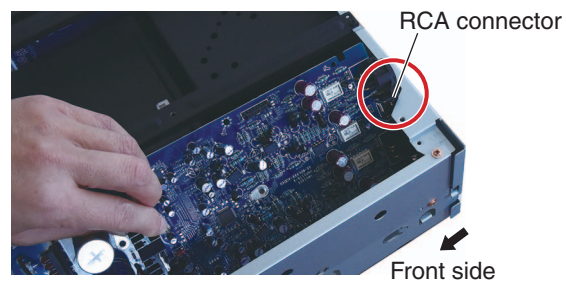


- E
- (10) Grip the heat sink on the front side (on your left in the photo) of the AUDIO BOARD Assy then raise the back side of the Assy.

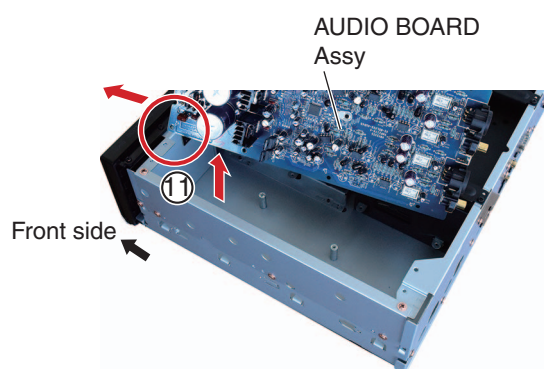


Front side

Pulling the Assy directly up is not possible, because the RCA connector will bump the rear panel.



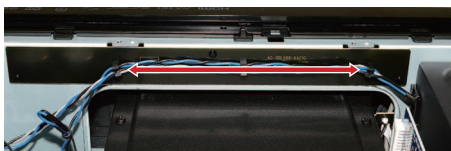
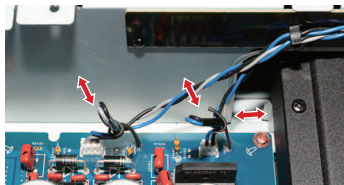
- (11) First pull out the front side of the board from the portion of the cabinet shown circled in the photo then pull out the entire board in the front-side direction.



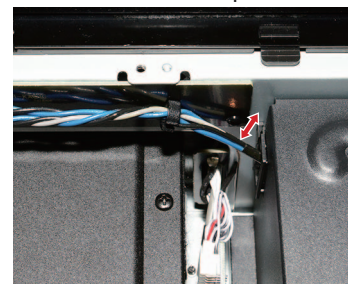
• **Dressing of cables on the secondary side of the audio transformer**

1. The cables must have no slack.
2. Excessive tension on the cable must be avoided. Secure appropriate tension.
3. The cables must not touch metallic parts.

- Secure sufficient distances between the cables and metallic parts.



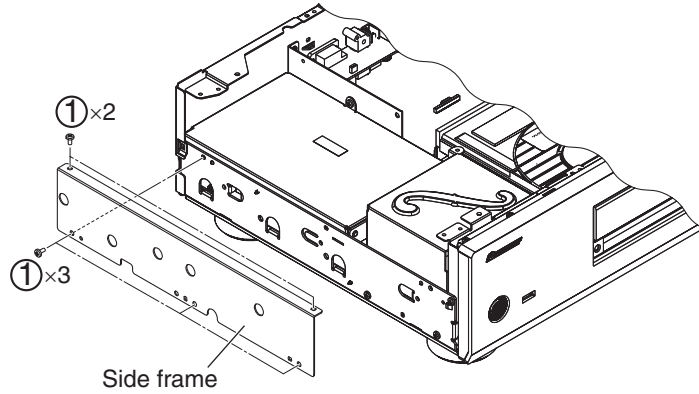
- Secure sufficient distances between the cables and metallic parts.



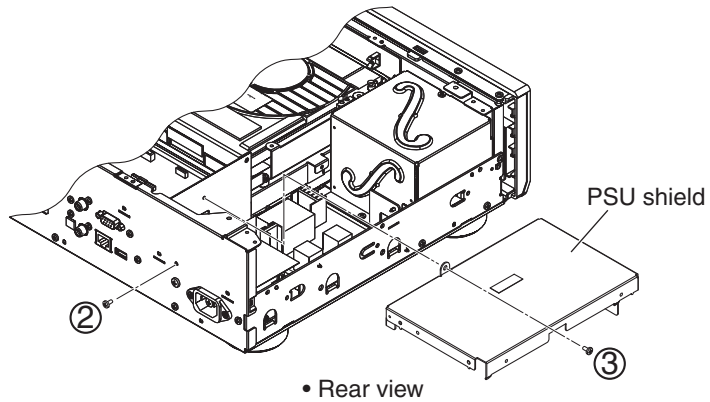
A [6] POWER BOARD Assy

- Remove the Top cover and 2 Side panels.
(See "[1] Exterior Section".)
- Remove the 2 Center frames and D Main shield top.
(See "[3] BD LOADER".)

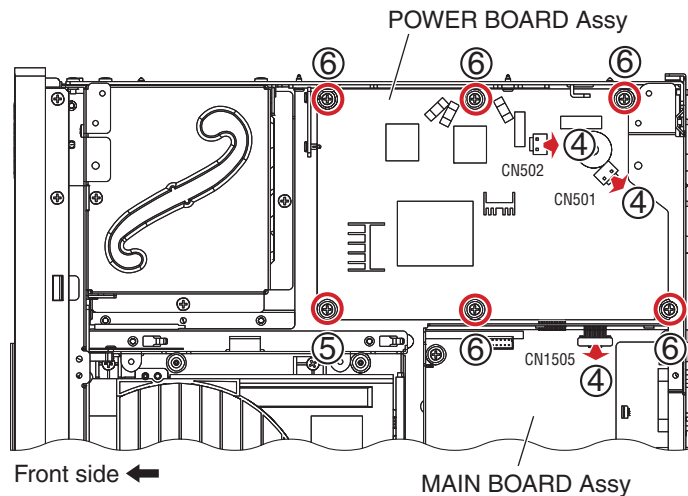
- (1) Remove the Side frame by removing the 5 screws.
(IBZ30P060FCC)



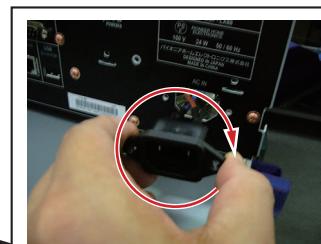
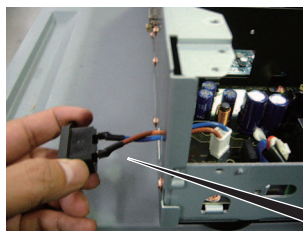
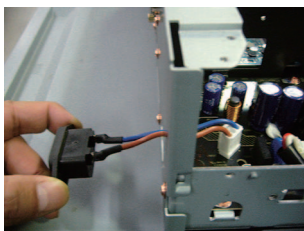
- (2) Remove the 1 screw.
(IBZ30P060FCC)
- (3) Remove the PSU shield by removing the 1 screw.
(BBZ30P080FTB)



- (4) Disconnect the 1 bridge connector and 2 connectors.
(CN501, 502, 1505)
- (5) Remove the 1 screw.
(64-W30060-105)
- (6) Remove the POWER BOARD Assy by removing the 5 screws.
(IBZ30P060FCC)



• Note on replacement of the AC inlet (on the Power Connection Assy)



Turn the AC inlet clockwise 360° to twist the cables.



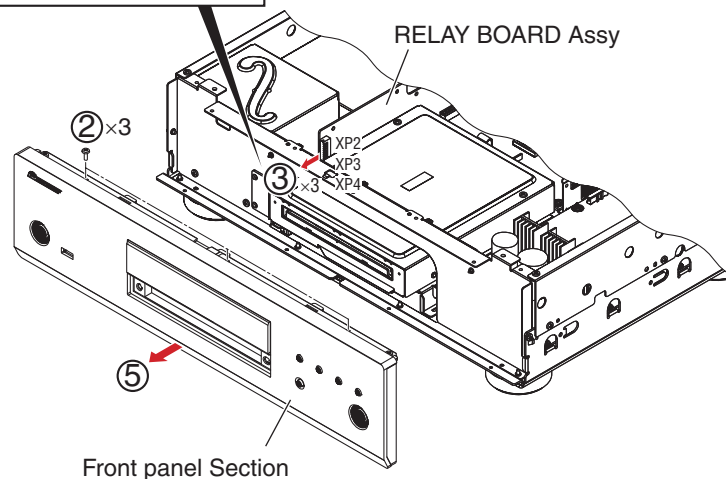
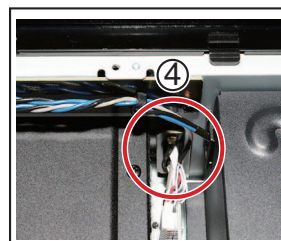
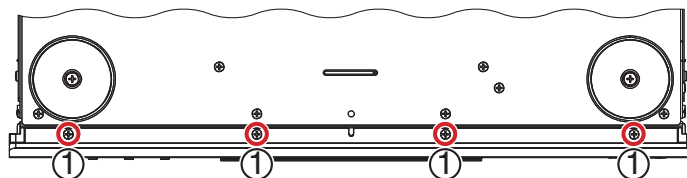
[7] Front panel Section

- Remove the Top cover and 2 Side panels.
(See "[1] Exterior Section".)
- Remove the Tray cap section.
(See "[2] Tray cap section".)
- Remove the 2 Center frames.
(See "[3] BD LOADER".)

- (1) Remove the 4 screws.
(Black model: BBZ30P080FTB)
(Silver model: BBZ30P080FNI)

- (2) Remove the 3 screws.
(Black model: BBZ30P080FTB)
(Silver model: BBZ30P080FNI)
- (3) Disconnect the 3 connectors.
(CN501, 5000, 5001)
- (4) Release the jumpers wires.
- (5) Remove the Front panel Section.

• Bottom view



8. EACH SETTING AND ADJUSTMENT

8.1 NECESSARY ITEMS FOR ADJUSTMENTS

A

Note: Be sure to update the firmware before starting adjustments or settings.

[1] When replace the BD LOADER

This time

When replace the BD LOADER

➔

Adjustment Points

Mechanical point

Electric point

Write barcode data for pickup adjustment

[2] When replace the MAIN BOARD Assy

This time

When replace the MAIN BOARD Assy

➔

Adjustment Points

Mechanical point

Electric point

- Read out barcode data for pickup adjustment (Before replacing MAIN BOARD Assy)
- Write barcode data for pickup adjustment (After replacing MAIN BOARD Assy)

Note:

- Change the Destination setting after MAIN BOARD Assy is replaced. After that, update the latest firmware.
- Please confirm that the USB memory device is recognized after inserting the USB memory device to the USB port. (Due to protect wrong connection)

[About barcode data for pickup adjustment]

D

A new BD LOADER is installed in this model and it has 64 bit barcode data for pickup adjustment. Therefore when replacing a new BD LOADER, it is necessary to write barcode data of the new BD LOADER. The barcode data is stored in a MAIN BOARD Assy. Therefore when replacing the MAIN BOARD Assy, it is necessary to read out the original barcode data before replacing it and write the data to a new MAIN BOARD Assy after installing it.

[How to read and write the barcode data to the unit]

In addition to the two conventional methods of reading/writing barcode data, a new method using a USB memory device has been added. It is recommended to use the new method if you have a USB memory device, because with this method setting is easier and input errors will be less likely to be generated. For details on the conventional methods (with the aid of the remote control unit or a combination of a PC and a special tool for servicing), refer to the Service Manual of the BDP-160.

E

	Necessary tools	Good Point	Bad Point
1	Remote control unit	It is not necessary to prepare other tools such as Service jig and PC.	Need to enter 64 letters barcode data by using a Remote control unit.
2	Service jig (GGF1676), PC, Driver and Read/Write program	It is very easy to read and write the barcode data.	It is necessary to prepare other tools such as Service jig and PC. (But Service Jig is very cheap.)
3	USB memory device (one that can be recognized in Normal Operation mode)	It is easy to read and write the barcode data.	It is necessary to prepare a USB memory device.

Please perform either method when replacing MAIN BOARD Assy or BD LOADER.

[Attention point when replacing MAIN BOARD Assy]

F

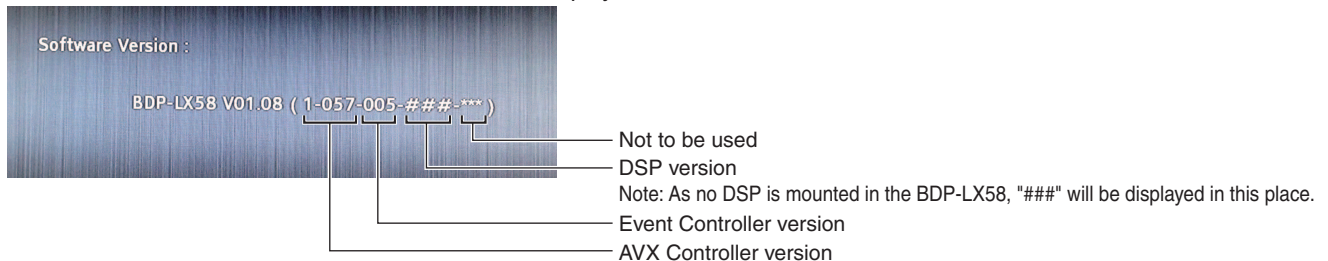
When the unit is no power condition due to defective of a MAIN BOARD Assy, original barcode data is not able to read out from it. In such a case, read out the data of the barcode label attached to the BD LOADER, referring to the SKH15002 Service Knowhow manual.

8.2 UPDATING OF THE FIRMWARE

The procedure for firmware updating is described below.

- Before performing updating, check the version of the current firmware installed in the unit.
To display the current firmware version, press the [HOME MENU] button to enter the menu, select "Home Menu," "Initial Setup," "Options," "System Information," then "Next Screen," using the $\uparrow/\downarrow/\leftarrow/\rightarrow$ buttons, then press the [ENTER] button.

The firmware version for the AVX controller will be displayed at the same time for the BDP-LX58/BDP-LX88.



- Download the DLdiscidentifier.txt, DVD.bin, AVX15I_XXXX.FW, and BDP-LX88_Vxx.xx.bin updater files from the Web site to store them in the root directory of the USB memory device plugged into the PC.
Note: The same updater files are used for the BDP-LX58 and BDP-LX88.

- After storage is completed, unplug the USB memory device from the PC then plug it into the unit. While a message that a USB memory device is connected is displayed on the screen, press the [HOME MENU] button to enter the menu, then select "Home Menu," "Initial Setup," "Options," "Update," then "USB Storage."
After you press the [ENTER] button, the system will search for the updater files. After the updater files are found, press the [ENTER] button again to start updating.

Note: As the updating process of the AVX Controller is skipped when no updating is required for it, the time required for updating varies greatly, as follows:

Time required for normal updating: 13 to 20 min.

Time required without updating of the AVX Controller: 30 sec. to 1 min.

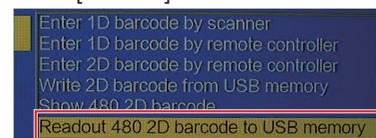
- After updating is completed, the unit will automatically restart.

Be sure to confirm the firmware version after restart. Updating is completed when the firmware version has been updated to the appropriate one.

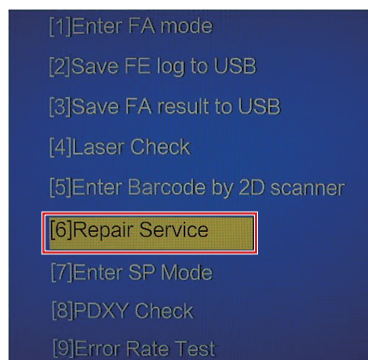
If the firmware version is not updated to the appropriate one, check the updater files then perform the updating procedure again.

8.3 HOW TO READ OUT BARCODE DATA USING A USB MEMORY DEVICE

- Plug a USB memory device into this unit in Normal mode.
(Make sure that the USB memory device is recognized.)
- Select "Readout 480 2D barcode to USB memory" then press the [ENTER] button.

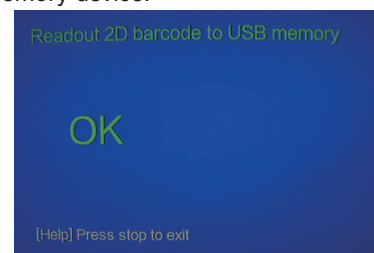


- Enter Service mode.
(See "HOW TO ENTER SERVICE MODE .")
- Select "[6] Repair Service" then press the [ENTER] button.



- The message "OK" will be displayed on the screen when copying of the barcode data to the USB memory device is finished.

At that moment, a "2D_barcode_data.txt" file, in which 64-bit barcode data have been written, is stored in the USB memory device.

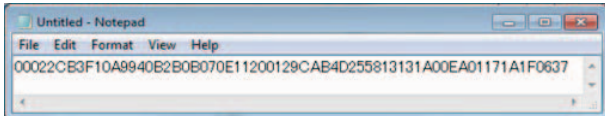


- Quit Service mode by pressing the [STOP] button.

8.4 HOW TO WRITE BARCODE DATA USING A USB MEMORY DEVICE

- If the BD LOADER is replaced, follow the procedure from Step 1 below.
- If the MAIN BOARD Assy is replaced, follow the procedure from Step 5 below.

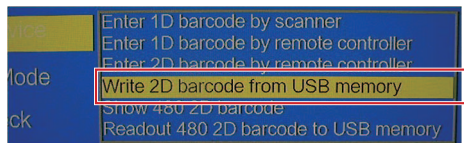
1. Open Notepad from Accessories on your PC. Plug the USB memory device into the PC.
2. Type the 64-digit barcode that is attached to the back of the BD LOADER for service into a Notepad file. (Be careful of input errors, because the barcode data are adjustment data for the new part.)



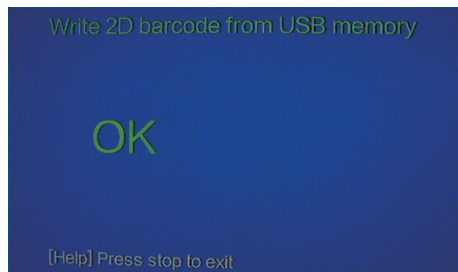
3. Store the Notepad file as "2D_barcode_data.txt" in the root directory of the USB memory device. After storage, remove the USB memory device from the PC.

4. Plug the USB memory device in which the "2D_barcode_data.txt" file is stored into the BDP unit whose BD LOADER has been replaced. (Make sure that the USB memory device is recognized.)

5. Enter Service mode. (See "HOW TO ENTER SERVICE MODE.")
6. Select "[6] Repair Service" then press the [ENTER] button.
7. Select "Write 2D barcode from USB memory" then press the [ENTER] button.



8. The message "OK" will be displayed on the screen when copying of the barcode data from the USB memory device is finished.



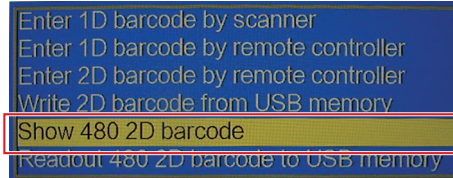
9. Quit Service mode by pressing the [STOP] button.

Note:

To prevent a future possible writing error, delete the "2D_barcode_data.txt" file from the USB memory device on the PC.

- If the MAIN BOARD Assy is replaced, the procedure is completed at Step 9.
- If the BD LOADER is replaced, continue the remaining Steps below.

10. Enter Service mode again.
11. Select "[6] Repair Service" then press the [ENTER] button.
12. Select "Show 480 2D barcode" then press the [ENTER] button.



13. Check that the 64-digit barcode being displayed is the same as that attached to the BD LOADER.

Show 480 2D barcode :

00022CB3F10A9940B2B0B070E11200129CAB4D
255813131A00EA01171A1F0637

If the barcode is not the same, perform the procedure from Step 1 again.

■

5

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A

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C

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D

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E

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8

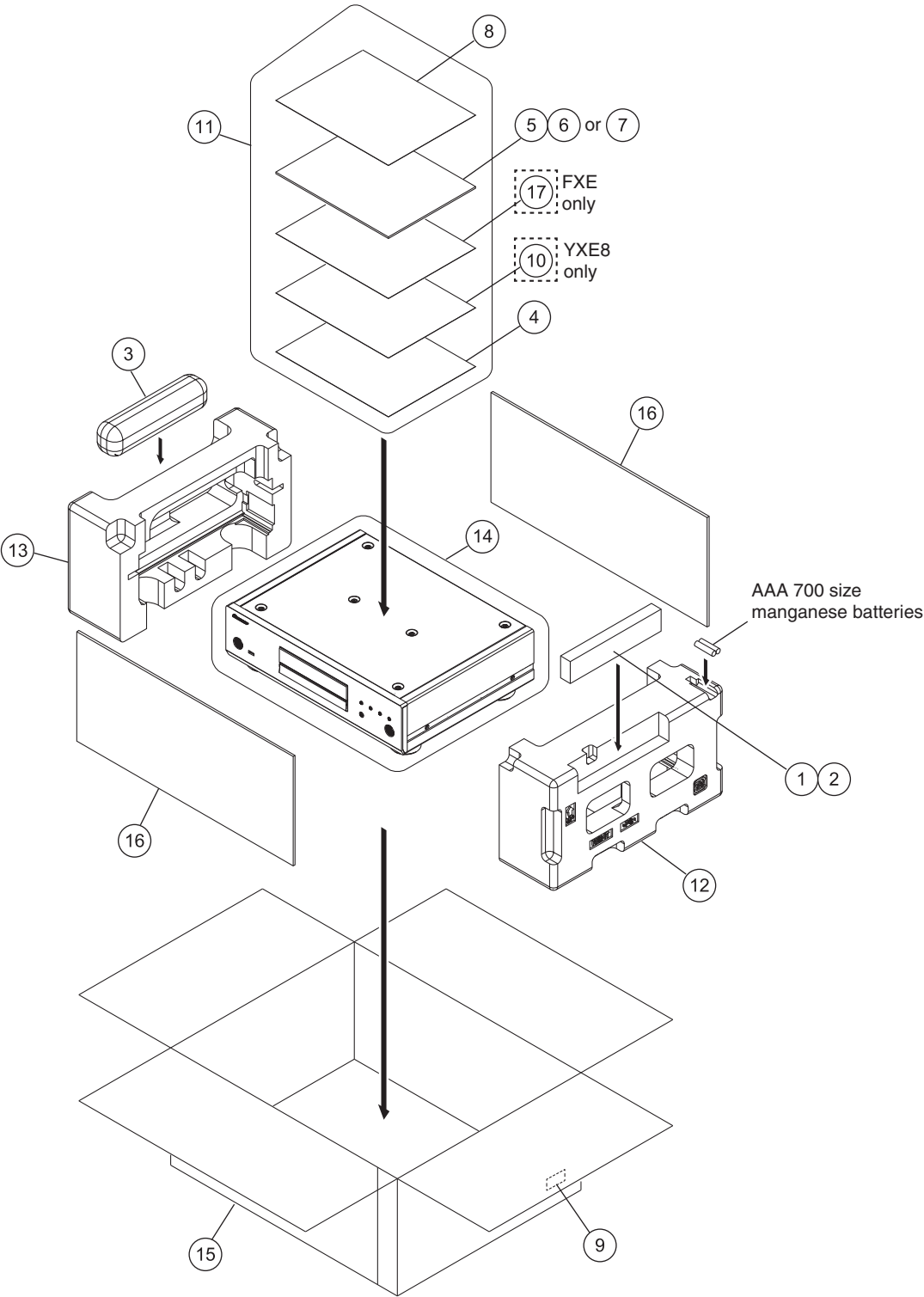
■

1234

9. EXPLODED VIEWS AND PARTS LIST

- NOTES:
- Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.
 - The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 - Screws adjacent to ▼ mark on product are used for disassembly.
 - For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)

9.1 PACKING SECTION



(1) PACKING SECTION PARTS LIST

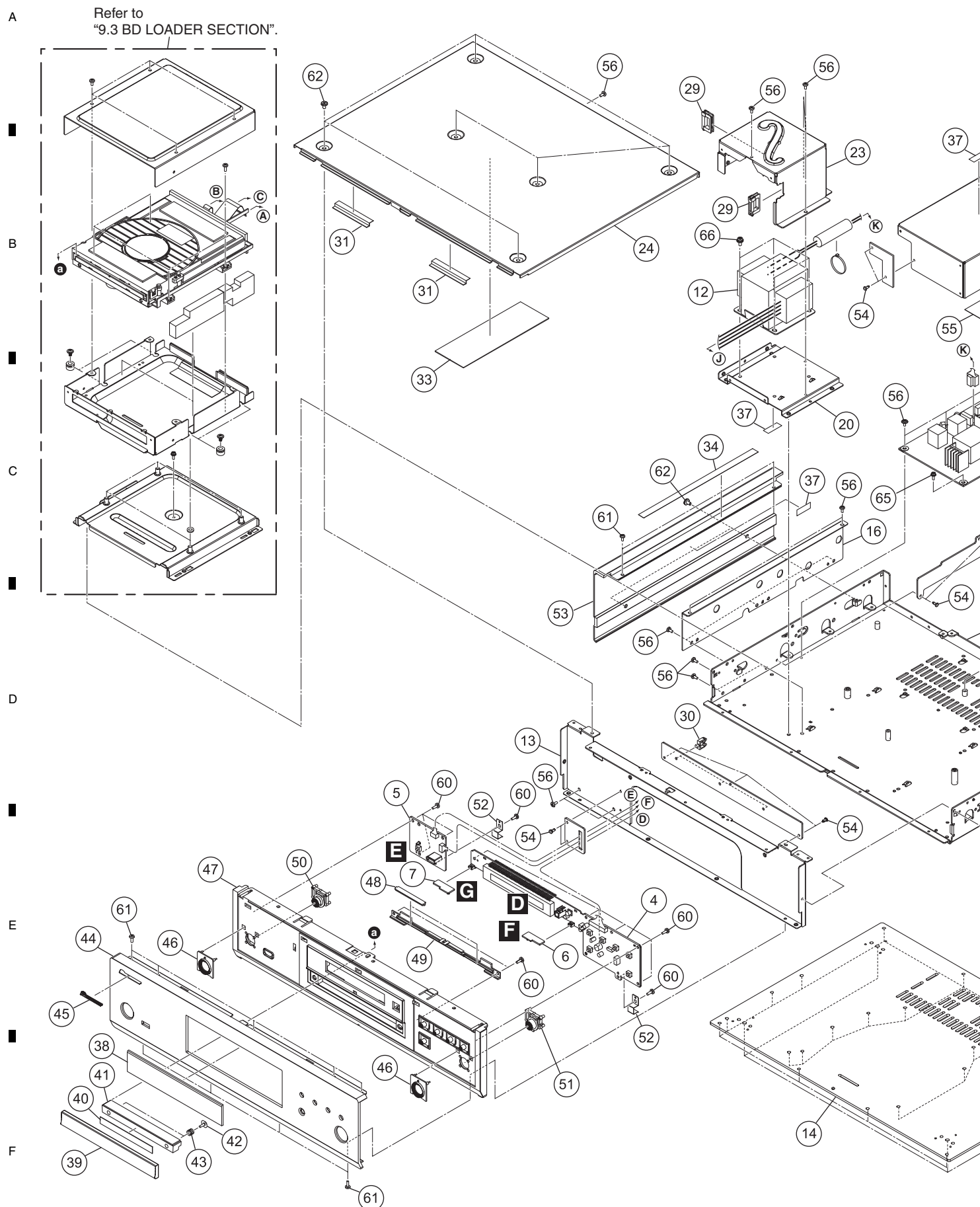
Mark	No.	Description	Part No.
	1	1..Remote Control	VXX3392
	2	2..Battery Cover	AZN8047
⚠	3	Power Cord	See Contrast table (2)
	4	Software License Notice	70-PONEER-LCSB4
	5	Operating Instructions	See Contrast table (2)
	6	Operating Instructions	See Contrast table (2)
	7	Operating Instructions	See Contrast table (2)
	8	Software Update Notice	70-BDPX58-SHTB2
	9	One Blue Label	71-BLURAY-EXTB1
NSP	10	Warranty Card	See Contrast table (2)
	11	Poly Bag	74-024035-50CD2
	12	Pad R	75-LX88R1-EA0
	13	Pad L	75-LX88L1-EA0
	14	Packing Sheet	74-150085-50GB1
	15	Packing Case	See Contrast table (2)
NSP	16	Corrugated Board	76-184800-0AP
	17	Taiwan Label	See Contrast table (2)

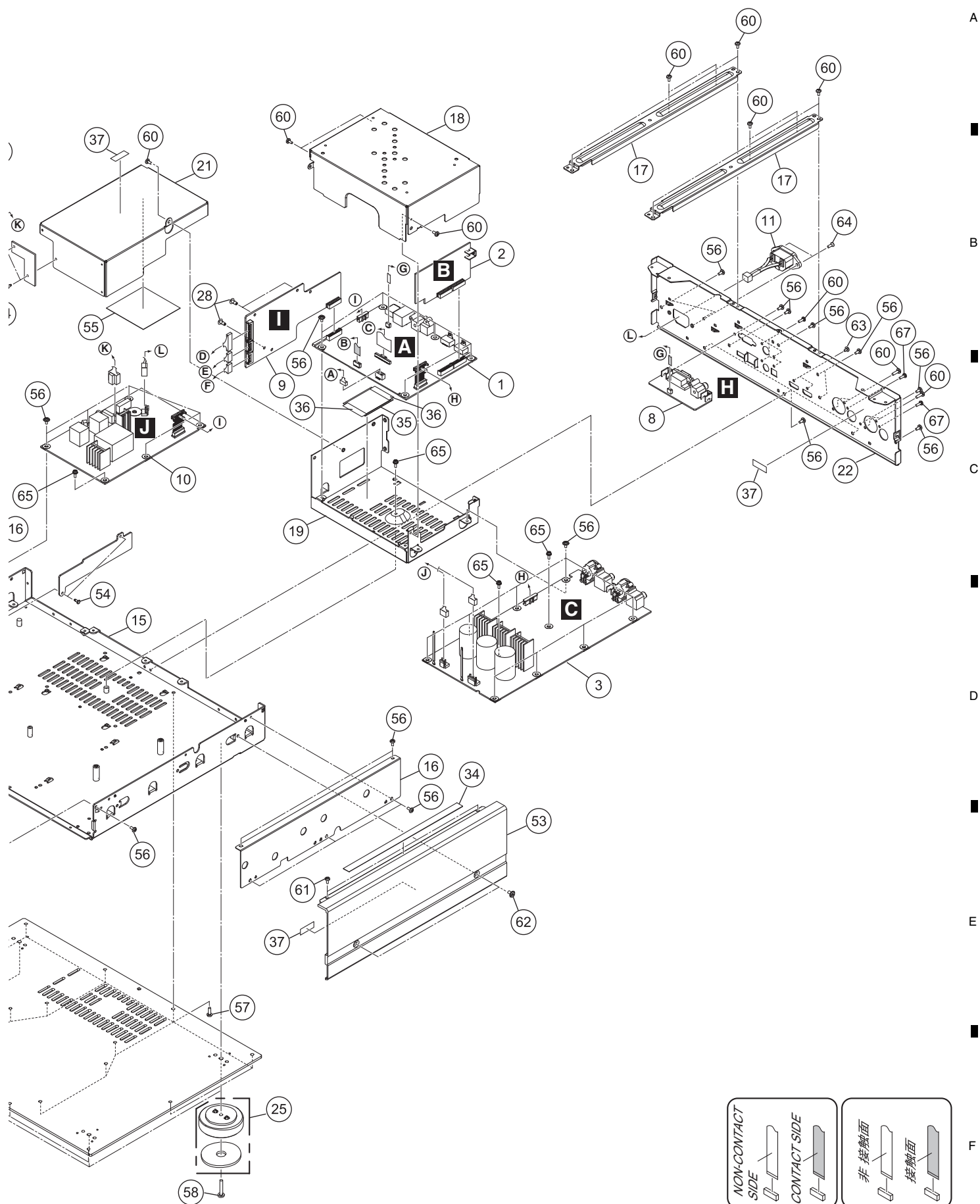
(2) CONTRAST TABLE

BDP-LX88-K/YXE8, BDP-LX88-S/YXE8, BDP-LX88/LXE and FXE are constructed the same except for the following:

Mark	No.	Symbol and Description	BDP-LX58-K /YXE8	BDP-LX58-S /YXE8	BDP-LX88 /LXE	BDP-LX88 /FXE
⚠	3	Power Cord	ADG7062	ADG7062	ADG7062	ADG7076
	5	Operating Instructions (En)	72-BDPL88-GBRB1	72-BDPL88-GBRB1	72-BDPL88-GBRB1	Not used
	6	Operating Instructions (Fr, De, It, NI, Es)	72-BDPL88-EURB1	72-BDPL88-EURB1	Not used	Not used
	7	Operating Instructions (Zhtw)	Not used	Not used	72-BDPL58-TWNB1	72-BDPL58-TWNB1
NSP	10	Warranty Card	70-PIONBD-WARD4	70-PIONBD-WARD4	Not used	Not used
	15	Packing Case	76-182360-0ATB1	76-182360-0ATB2	76-182360-0ATB4	76-182360-0ATB5
	17	Taiwan Label	Not used	Not used	Not used	71-BDPL88-FXEB1

9.2 EXTERIOR SECTION





(1) EXTERIOR SECTION PARTS LIST

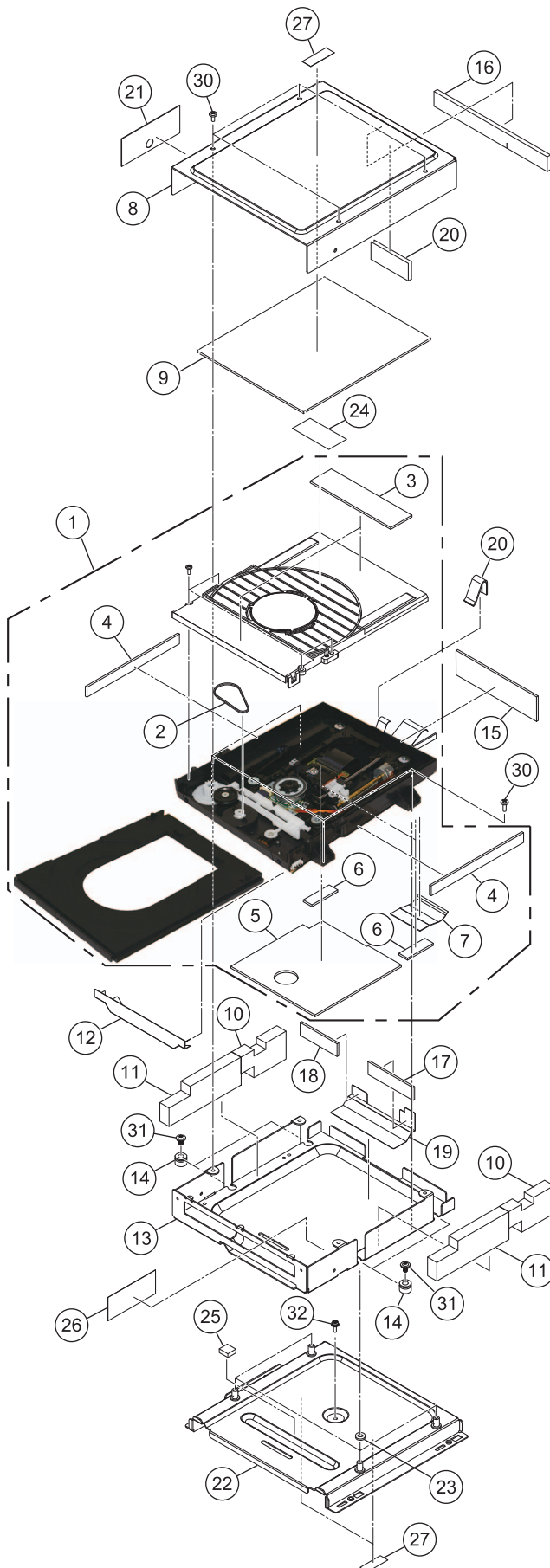
Mark No.	Description	Part No.	Mark No.	Description	Part No.
A	1 MAIN BOARD Assy	See Contrast table (2)	NSP 36	Tape Copper Sheet	54-151900-000
	2 DSP BOARD Assy	08-BDLX88-DS1	37	Tape 28*10	89-168590-000
	3 AUDIO BOARD Assy	08-BDLX88-AD1	38	Window	57-LX88L1-0HHB1
	4 FRONT CONTROL BOARD Assy	08-BDLX88-FV1	39	Tray Cap	See Contrast table (2)
	5 SWITCH BOARD Assy	08-BDLX88-SW0	40	Cushion 92*10 (ACC Mold)	54-184670-000
	6 LED BOARD Assy	08-BDLX88-LE1	41	ACC Mold	55-LX88D2-0HAB1
	7 LED BOARD Assy	08-BDLX88-LE0	42	ACC Screw	63-S26070-AB2
	8 RS BOARD Assy	08-BDLX88-RS0	43	ACC Spring	67-LX88A1-0E2
	9 RELAY BOARD Assy	08-BDLX88-RL0	44	AL Front Panel	See Contrast table (2)
	10 POWER BOARD Assy	08-BDLX88-PW2	45	Pioneer Badge	67-104290-0A0B1
B	⚠ 11 Power Connection Assy	08-BDLX88-AC0	46	Ring	See Contrast table (2)
	⚠ 12 Audio Trans	See Contrast table (2)	47	Panel Base Assy	See Contrast table (2)
	NSP 13 Front Stay	67-LX88H3-0E0	48	Lens	55-LX88L1-0HM
	NSP 14 Bottom Plate	67-LX88W2-0E0B1	49	Lens Holder	55-LX88W1-0HA
	NSP 15 Main Chassis	67-LX88R1-0E0	50	Power Button Assy	See Contrast table (2)
C	NSP 16 Side Frame	67-LX88H2-0E0	51	Play Button	See Contrast table (2)
	NSP 17 Center Frame	67-LX88H1-0E0B1	NSP 52	Earth Plate	67-LX88Q1-0B0
	NSP 18 D Main Shield Top	67-LX88V3-0E0B1	53	Side Panel	See Contrast table (2)
	NSP 19 D Main Shield Bottom	67-LX88H5-0E0B1	54	Rivet	57-184680-02G
	NSP 20 Trans Frame	67-LX88H4-0E0	55	PC Sheet	58-193650-000
D	NSP 21 PSU Shield	67-LX88V2-0E0B1	56	Screw	IBZ30P060FCC
	22 Back Chassis	See Contrast table (2)	57	Screw	BBZ30P100FTB
	NSP 23 Trans Shield	67-LX88V2-0E0B1	58	Screw	64-B40100-103
	NSP 24 Top Cover	See Contrast table (2)	59	•••••	
	25 Mold Foot Assy	08-LX58E1-000	60	Screw	BBZ30P080FTB
E	26 •••••		61	Screw	See Contrast table (2)
	27 •••••		62	Hex Screw	See Contrast table (2)
	28 Rivet	57-168570-12G	63	HDMI Screw	64-T30040-103
	29 Snap Bushing	57-184830-02G	64	Screw	CBZ30P080FTB
	30 Mold Clamp	57-168560-12G	65	Screw	64-W30060-105
F	31 Cushion 60*16 (Bonnet)	54-184490-000	66	Trans Screw	63-Z40080-BF3
	32 •••••		67	Screw	BBZ30P100FCC
	33 CR Sheet (Bonnet)	59-184760-000			
	34 Tape 200*10	89-168590-000			
	35 Copper Sheet	58-188930-000			

(2) CONTRAST TABLE

BDP-LX88-K/YXE8, BDP-LX88-S/YXE8, BDP-LX88/LXE and FXE are constructed the same except for the following:

Mark	No.	Symbol and Description	BDP-LX58-K/YXE8	BDP-LX58-S/YXE8	BDP-LX88/LXE	BDP-LX88/FXE
NSP	1	MAIN BOARD Assy	08-BDLX88-MA1/Y	08-BDLX88-MA1/Y	08-BDLX88-MA2	08-BDLX88-MA2/F
	12	Audio Trans	VTT1177	VTT1177	VTT1177	VTT1176
	22	Back Chassis	67-LX88B1-0E0B3	67-LX88B1-0E0B2	67-LX88B1-0E0B4	67-LX88B1-0E0B5
	24	Top Cover	67-LX88T1-0E0B1	67-LX88T1-0E0B2	67-LX88T1-0E0B1	67-LX88T1-0E0B1
	39	Tray Cap	55-LX88D1-0HMB4	55-LX88D1-0HMB5	55-LX88D1-0HMB4	55-LX88D1-0HMB4
F	44	AL Front Panel	67-LX88F1-0A3B2	67-LX88F1-0A3B3	67-LX88F1-0A3B2	67-LX88F1-0A3B2
	46	Ring	56-BD44W2-0HAB1	56-BD44W2-0HAB2	56-BD44W2-0HAB1	56-BD44W2-0HAB1
	47	Panel Base Assy	08-LX88F2-000	08-LX88F2-001	08-LX88F2-000	08-LX88F2-000
	50	Power Button Assy	02-BD44K1-00XB1	02-BD44K1-00XB2	02-BD44K1-00XB1	02-BD44K1-00XB1
	51	Play Button	56-BD44K4-0HAB1	56-BD44K4-0HAB2	56-BD44K4-0HAB1	56-BD44K4-0HAB1
	53	Side Panel	67-LX88F2-0A3B1	67-LX88F2-0A3B2	67-LX88F2-0A3B1	67-LX88F2-0A3B1
	61	Screw	BBZ30P080FTB	BBZ30P080FNI	BBZ30P080FTB	BBZ30P080FTB
	62	Hex Screw	63-N40060-BF3	63-N40060-BF2	63-N40060-BF3	63-N40060-BF3

9.3 BD LOADER SECTION

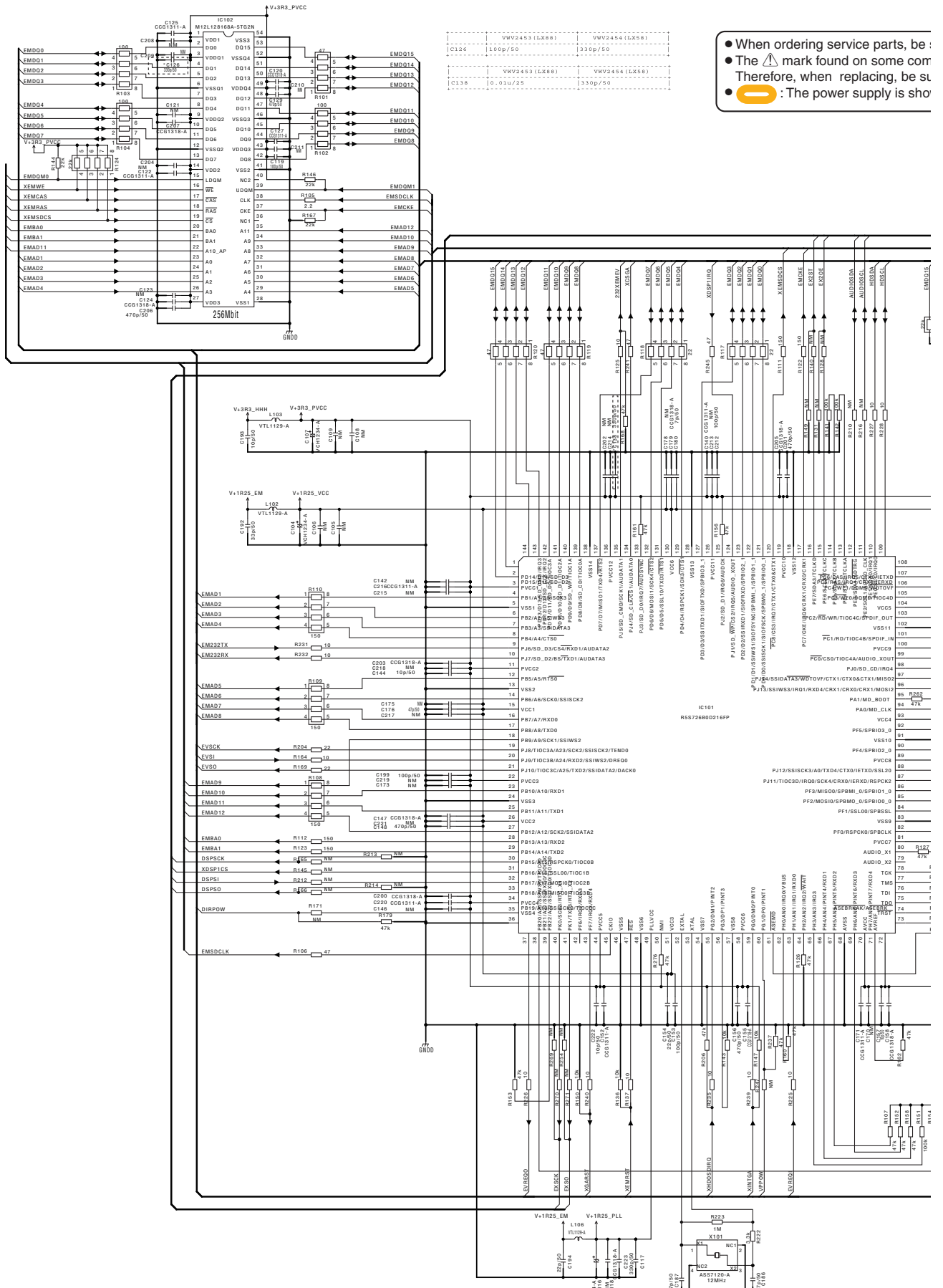


BD LOADER SECTION PARTS LIST

Mark No.	Description	Part No.
1	1..BD LOADER	08-BDLX58-SH0
2	2..Rubber Belt	59-190010-000
NSP 3	2..Top Rubber	59-184850-000
NSP 4	2..Side Rubber	59-117420-000
NSP 5	2..Bottom Rubber B	59-182190-000
NSP 6	2..Bottom Rubber S	59-117470-000
NSP 7	2..Cushion 35*35	54-187860-000
NSP 8	Mecha Shield Top	67-LX88V4-0E0B1
9	Top Cushion	54-182230-000
10	Side Cushion R	54-182180-000
11	Side Cushion F	54-182170-000
12	Front Cover	58-182150-0HH
NSP 13	Mecha Shield Bottom	67-LX88H7-0E0B1
14	Float Rubber	59-976590-003
NSP 15	Rear Rubber	59-184880-000
16	Rear Cushion T	54-182240-000
17	Rear Cushion BR	54-184900-000
18	Rear Cushion BL	54-184910-000
19	FFC Cover	58-184930-0HH
20	FFC Sheet	54-184890-000
21	Wire Sheet	54-188070-000
NSP 22	Mecha Frame	67-LX88H6-0E0
23	PC Spacer	58-184970-0HH
24	Laser Caution Label	71-BD1100-LASB2
25	Gasket	54-970540-000
26	Sheet 56*24	58-193590-000
27	Tape 28*10	89-168590-000
28	
29	
30	Screw	BBZ30P080FTB
31	FLOAT Screw	64-W30060-303
32	Screw	64-W30060-105

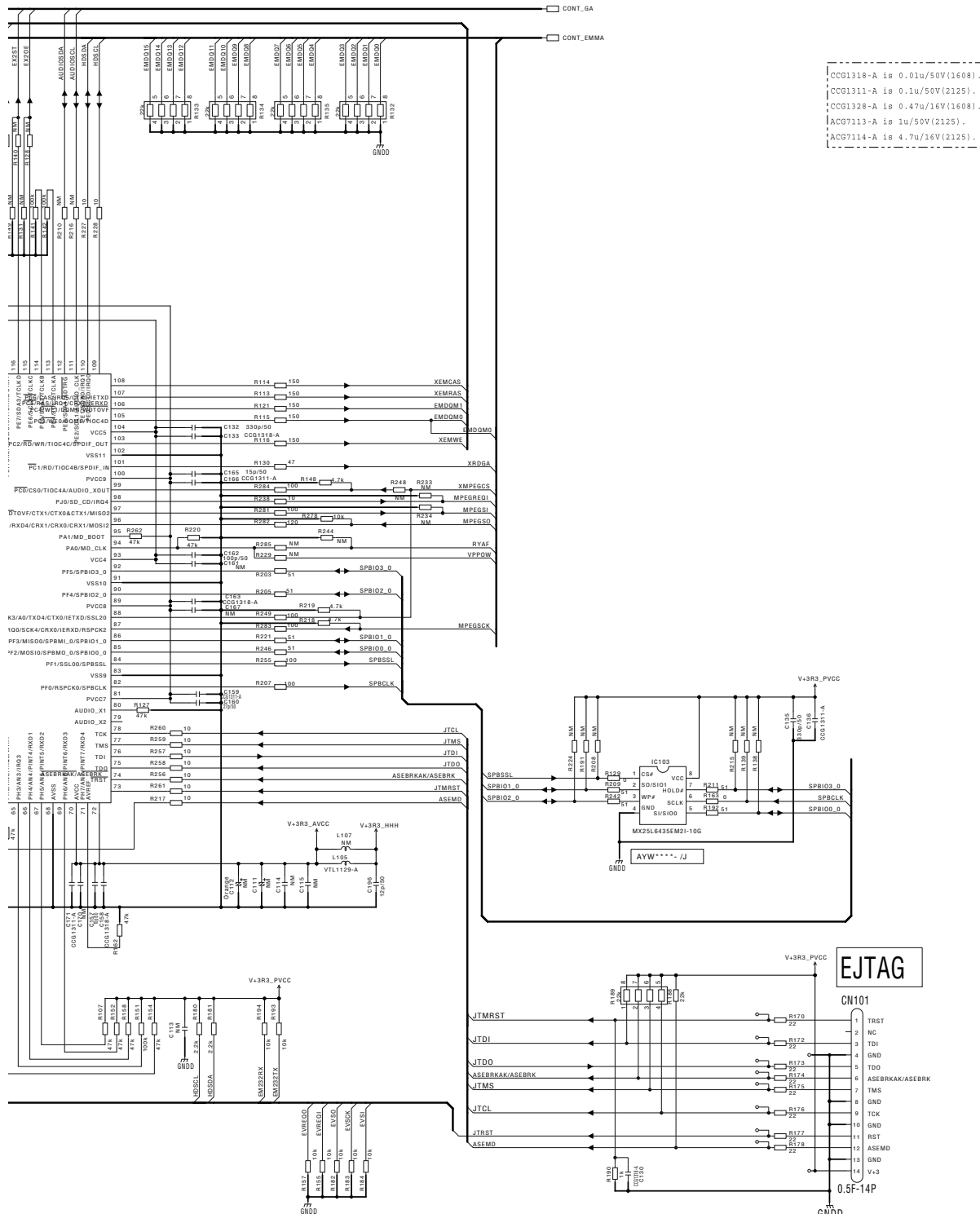
10. SCHEMATIC DIAGRAM

10.1 MAIN BOARD ASSY (1/10)



ing service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
 k found on some component parts indicates the importance of the safety factor of the part.
 when replacing, be sure to use parts of identical designation.
 power supply is shown with the marked box.

A1/10 MAIN BOARD ASSY (YXE8: 08-BDLX88-MA1/Y) (LXE: 08-BDLX88-MA2) (FXE: 08-BDLX88-MA2/F)



△

F



A



C

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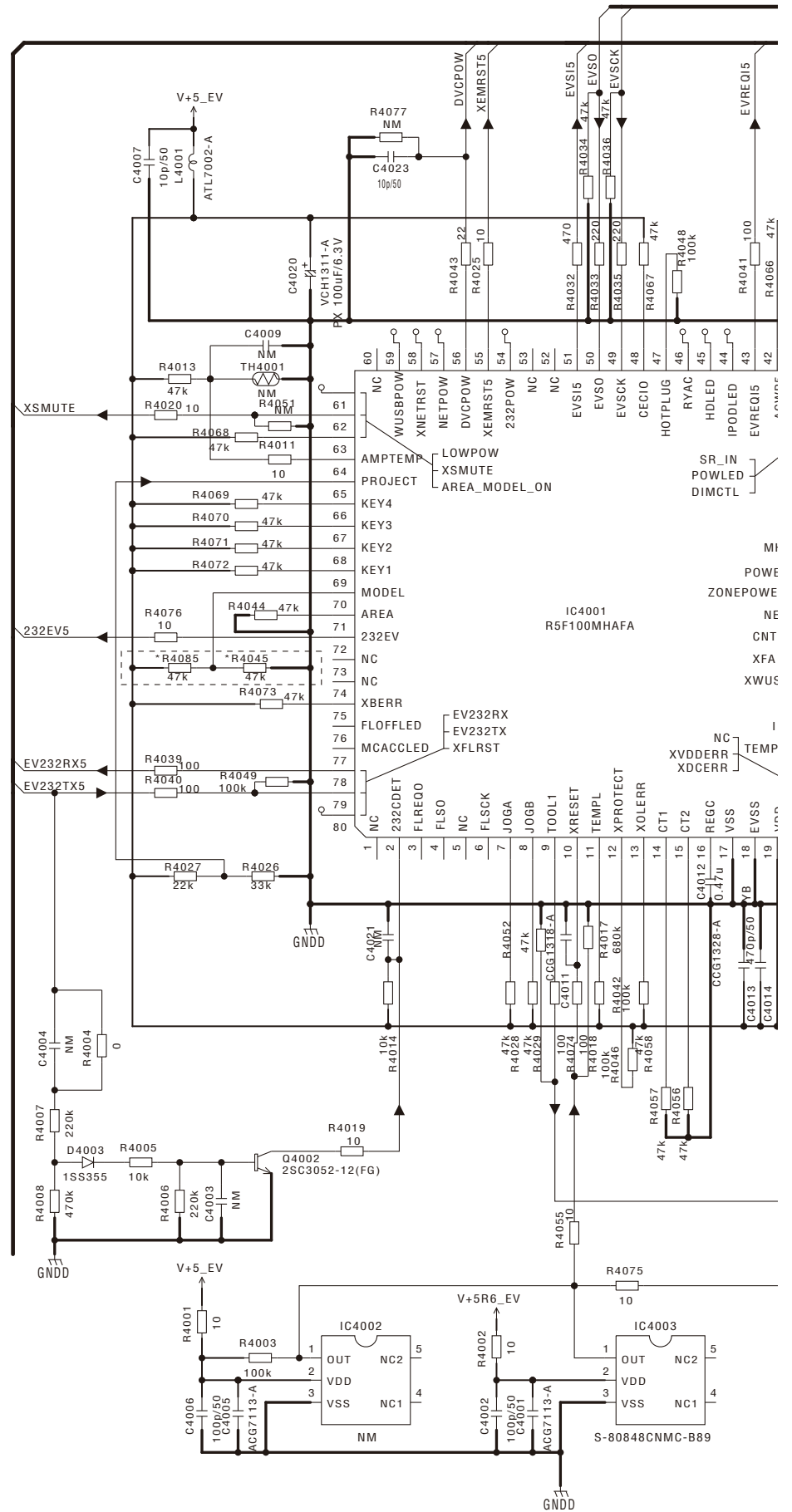
F

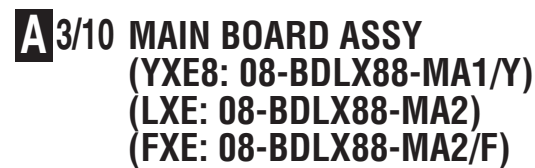
10.3 MAIN BOARD ASSY (3/10)

BDP-LX Model Select

63pin AREA MODEL ON : 5V
65pin PROJECT : 5V
70pin MODEL : LX50 0V, LX88 5V
71pin AREA : 0V

		VHV2453 (LX88)	VHV2454 (LX50)
R4045	NM	47k	
R4055	47k		NM





```
CCG1318-A is 0.01u/50V(1608).
CCG1311-A is 0.1u/50V(2125).
CCG1328-A is 0.47u/16V(1608).
ACG7113-A is 1u/50V(2125).
ACG7114-A is 4.7u/16V(2125).
```

CN4001
1.0A-05PB






Diagram showing the connection of pins 1 through 5 of the CN4001 component. Pin 1 is connected to GNDD. Pin 2 is connected to TOOL1. Pin 3 is connected to XRESET. Pin 4 is connected to V+5_EVDD. Pin 5 is connected to V+5V_VDD.

Pin	Signal
1	GNDD
2	TOOL1
3	XRESET
4	V+5_EVDD
5	V+5V_VDD

for DBUEGD.L.

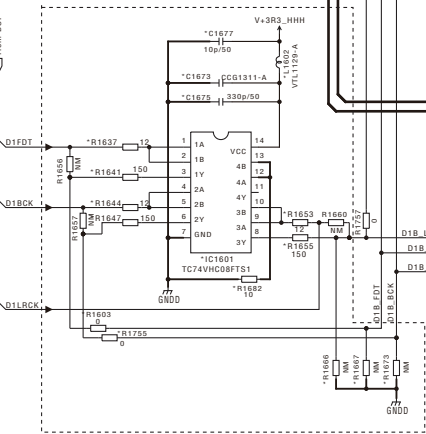
10.4 MAIN BOARD ASSY (4/10)

The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

 印の部品は、安全上重要な部品です。交換するときは、安全および性能維持のため必ず指定の部品をご使用ください。

	VW2453 (L288)	VW2454 (L258)
R1684	150	22
R1685	150	22

	VW2453 (L288)	VW2454 (L258)
C1673	CG03111-A	0M
C1675	330p/50	0M
C1677	100p/50	0M
C1679	100p/50	0M
C1681	100p/50	0M
C1683	100p/50	0M
C1685	100p/50	0M
C1687	100p/50	0M
C1689	100p/50	0M
C1691	100p/50	0M
C1693	100p/50	0M
C1695	100p/50	0M
C1697	100p/50	0M
C1699	100p/50	0M
C1701	100p/50	0M
C1703	100p/50	0M
C1705	100p/50	0M
C1707	100p/50	0M
C1709	100p/50	0M
C1711	100p/50	0M
C1713	100p/50	0M
C1715	100p/50	0M
C1717	100p/50	0M
C1719	100p/50	0M
C1721	100p/50	0M
C1723	100p/50	0M
C1725	100p/50	0M
C1727	100p/50	0M
C1729	100p/50	0M
C1731	100p/50	0M
C1733	100p/50	0M
C1735	100p/50	0M
C1737	100p/50	0M
C1739	100p/50	0M
C1741	100p/50	0M
C1743	100p/50	0M
C1745	100p/50	0M
C1747	100p/50	0M
C1749	100p/50	0M
C1751	100p/50	0M
C1753	100p/50	0M
C1755	100p/50	0M
C1757	100p/50	0M
C1759	100p/50	0M
C1761	100p/50	0M
C1763	100p/50	0M
C1765	100p/50	0M
C1767	100p/50	0M
C1769	100p/50	0M
C1771	100p/50	0M
C1773	100p/50	0M
C1775	100p/50	0M
C1777	100p/50	0M
C1779	100p/50	0M
C1781	100p/50	0M
C1783	100p/50	0M
C1785	100p/50	0M
C1787	100p/50	0M
C1789	100p/50	0M
C1791	100p/50	0M
C1793	100p/50	0M
C1795	100p/50	0M
C1797	100p/50	0M
C1799	100p/50	0M
C1801	100p/50	0M
C1803	100p/50	0M
C1805	100p/50	0M
C1807	100p/50	0M
C1809	100p/50	0M
C1811	100p/50	0M
C1813	100p/50	0M
C1815	100p/50	0M
C1817	100p/50	0M
C1819	100p/50	0M
C1821	100p/50	0M
C1823	100p/50	0M
C1825	100p/50	0M
C1827	100p/50	0M
C1829	100p/50	0M
C1831	100p/50	0M
C1833	100p/50	0M
C1835	100p/50	0M
C1837	100p/50	0M
C1839	100p/50	0M
C1841	100p/50	0M
C1843	100p/50	0M
C1845	100p/50	0M
C1847	100p/50	0M
C1849	100p/50	0M
C1851	100p/50	0M
C1853	100p/50	0M
C1855	100p/50	0M
C1857	100p/50	0M
C1859	100p/50	0M
C1861	100p/50	0M
C1863	100p/50	0M
C1865	100p/50	0M
C1867	100p/50	0M
C1869	100p/50	0M
C1871	100p/50	0M
C1873	100p/50	0M
C1875	100p/50	0M
C1877	100p/50	0M
C1879	100p/50	0M
C1881	100p/50	0M
C1883	100p/50	0M
C1885	100p/50	0M
C1887	100p/50	0M
C1889	100p/50	0M
C1891	100p/50	0M
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C1895	100p/50	0M
C1897	100p/50	0M
C1899	100p/50	0M
C1901	100p/50	0M
C1903	100p/50	0M
C1905	100p/50	0M
C1907	100p/50	0M
C1909	100p/50	0M
C1911	100p/50	0M
C1913	100p/50	0M
C1915	100p/50	0M
C1917	100p/50	0M
C1919	100p/50	0M
C1921	100p/50	0M
C1923	100p/50	0M
C1925	100p/50	0M
C1927	100p/50	0M
C1929	100p/50	0M
C1931	100p/50	0M
C1933	100p/50	0M
C1935	100p/50	0M
C1937	100p/50	0M
C1939	100p/50	0M
C1941	100p/50	0M
C1943	100p/50	0M
C1945	100p/50	0M
C1947	100p/50	0M
C1949	100p/50	0M
C1951	100p/50	0M
C1953	100p/50	0M
C1955	100p/50	0M
C1957	100p/50	0M
C1959	100p/50	0M
C1961	100p/50	0M
C1963	100p/50	0M
C1965	100p/50	0M
C1967	100p/50	0M
C1969	100p/50	0M
C1971	100p/50	0M
C1973	100p/50	0M
C1975	100p/50	0M
C1977	100p/50	0M
C1979	100p/50	0M
C1981	100p/50	0M
C1983	100p/50	0M
C1985	100p/50	0M
C1987	100p/50	0M
C1989	100p/50	0M
C1991	100p/50	0M
C1993	100p/50	0M
C1995	100p/50	0M
C1997	100p/50	0M
C1999	100p/50	0M



F



F



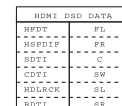
F

4

F

4

F

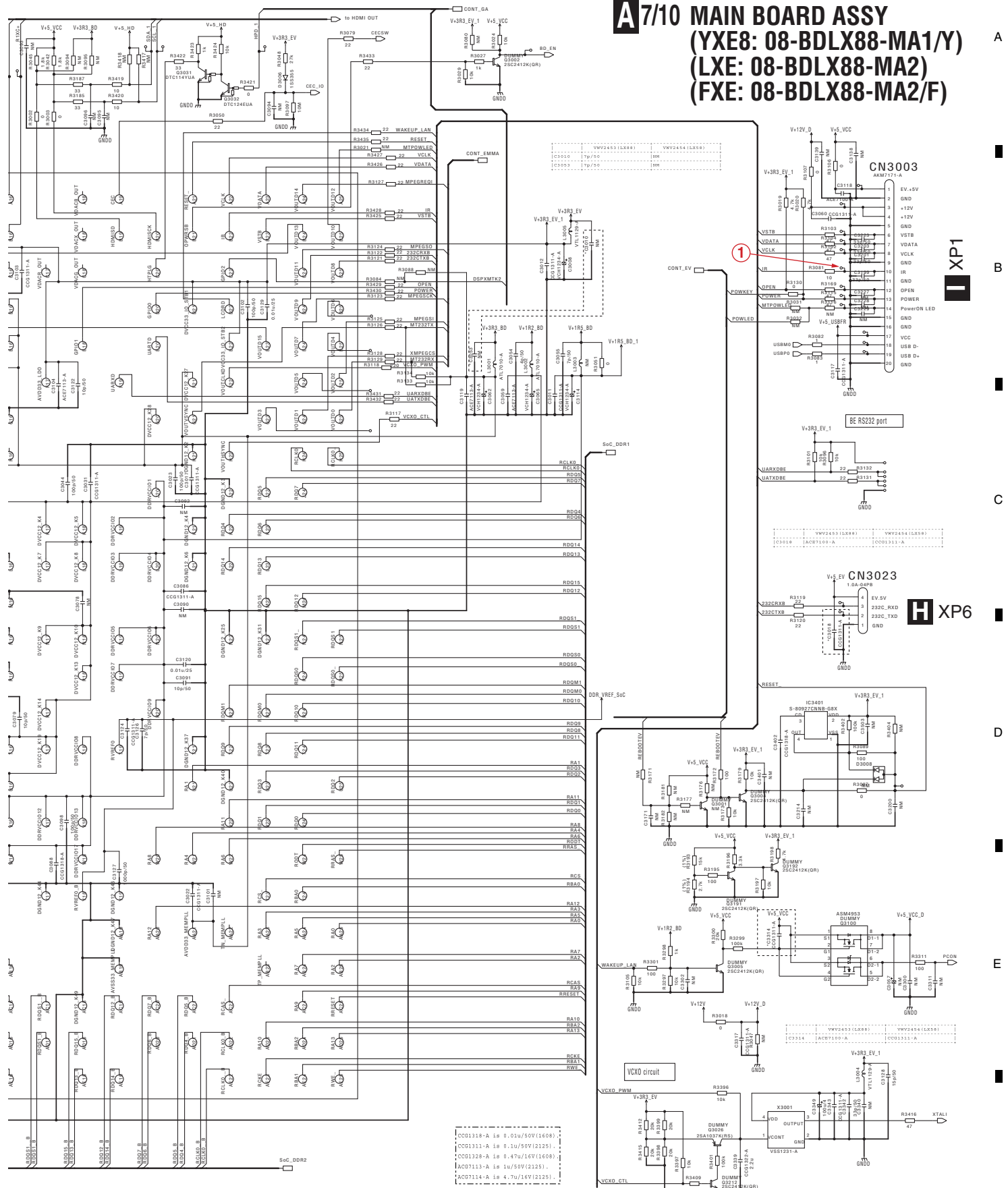


(DATA) : Audio Data (I2S) Signal

A 7/10



A7/10 MAIN BOARD ASSY (YXE8: 08-BDLX88-MA1/Y) (LXE: 08-BDLX88-MA2) (FXE: 08-BDLX88-MA2/F)

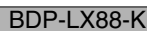


△

F



70

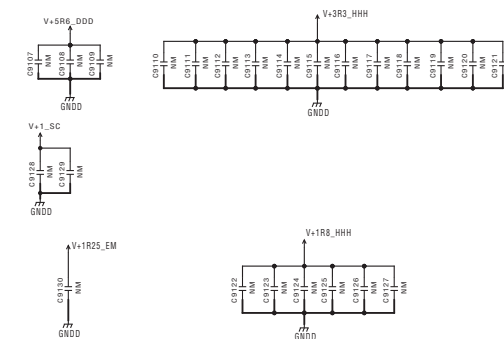
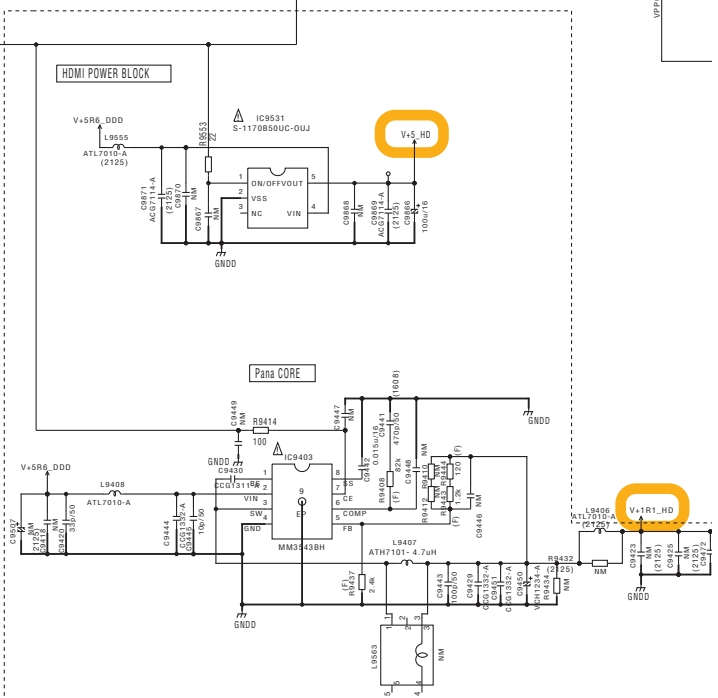
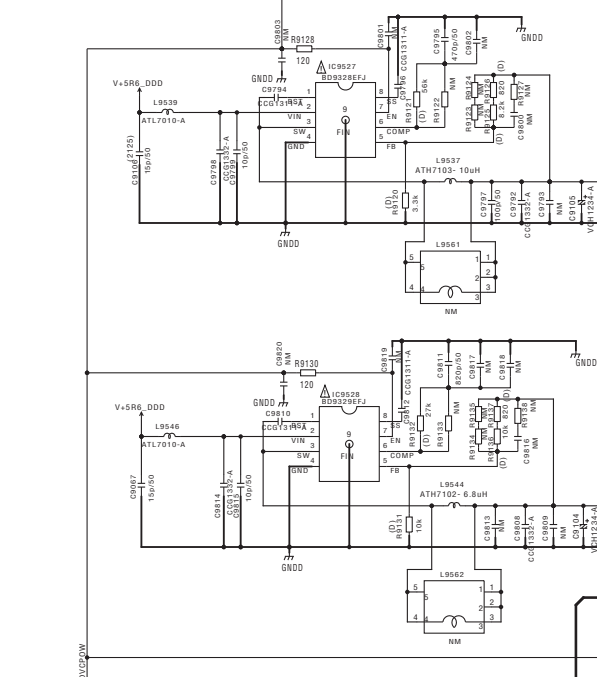
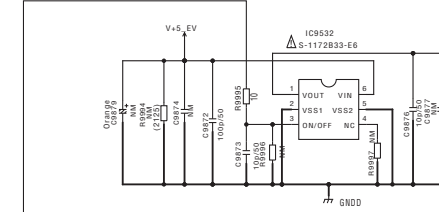
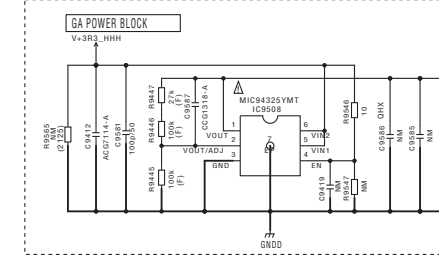
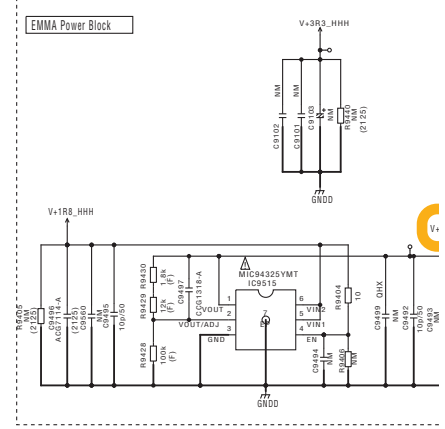
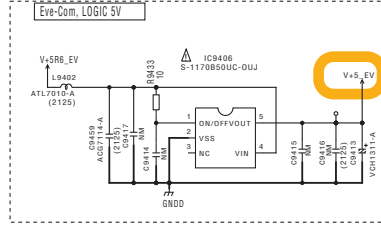
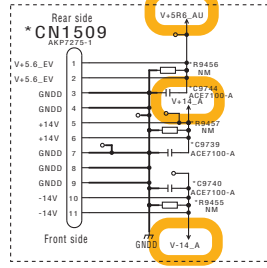
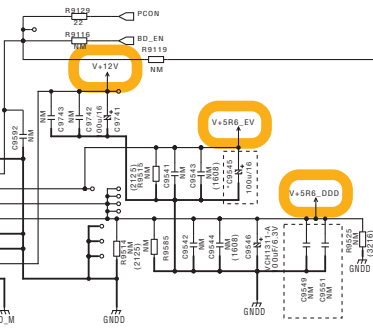


F

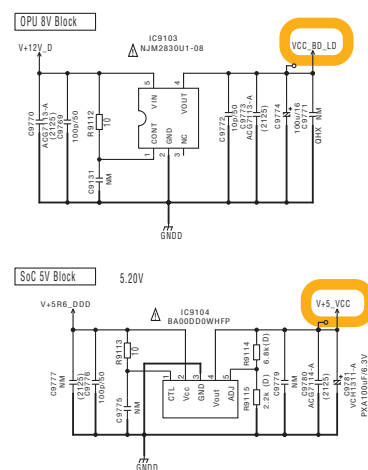
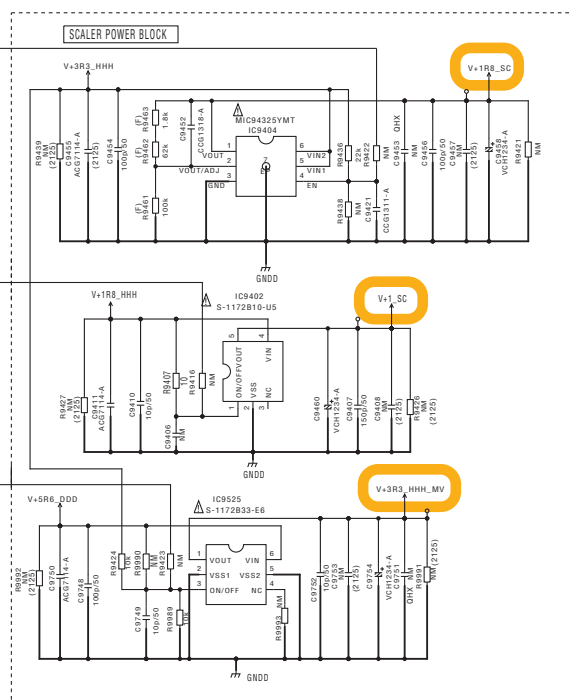
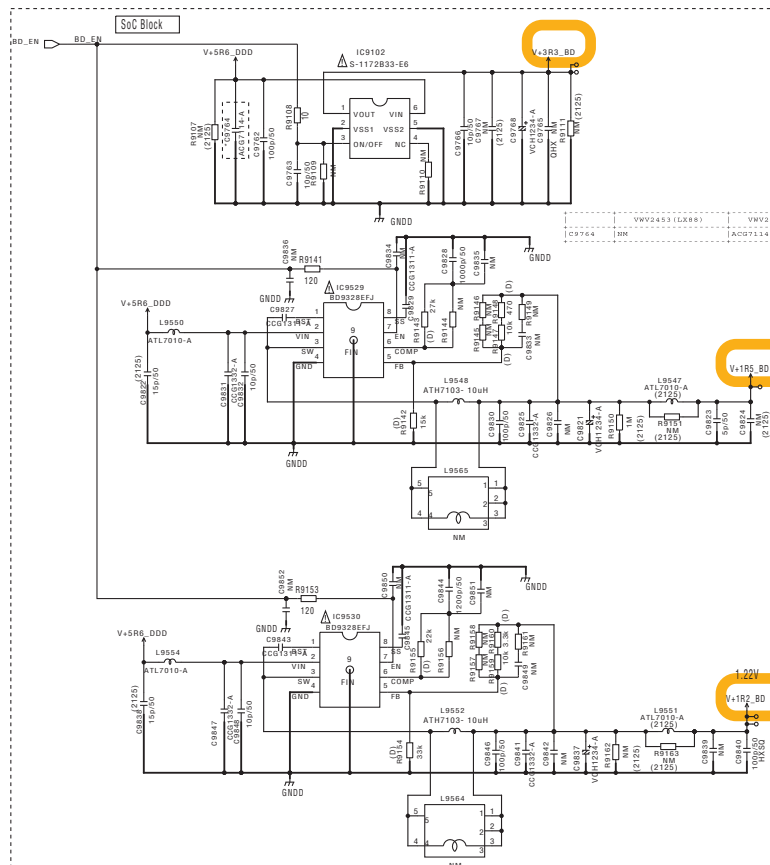
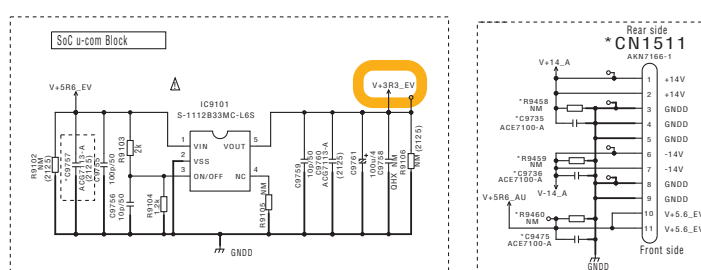
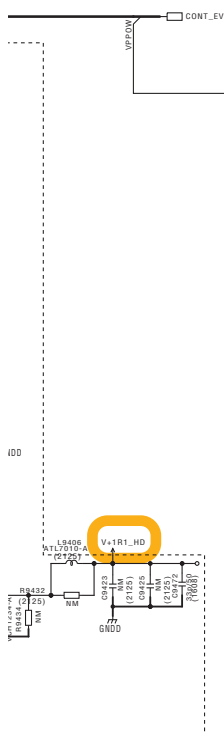



10.10 MAIN BOARD ASSY (10/10)

C9739	NM	VMV2453(LX88)	VMV2454(LX58)
C9740	NM	ACR7100-A	ACR7100-A
C9744	NM	ACR7100-A	ACR7100-A
R9455	0	NM	NM
R9456	0	NM	NM
R9457	0	NM	NM
CN1509	NM	AKP7274-1	AKP7274-1
C9545	VMV2453(LX88)	VMV2454(LX58)	
C9545	VCN1311-A	100u/16	



CCG1318-A	1e	0.01u/50V(1608)
ACQ7118-A	1e	0.01u/50V(2125)
CCG1311-A	1e	0.1u/50V(2125)
CCG1328-A	1e	0.47u/16V(1608)
ACQ7113-A	1e	1u/50V(2125)
ACQ7114-A	1e	4.7u/36V(2125)



The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

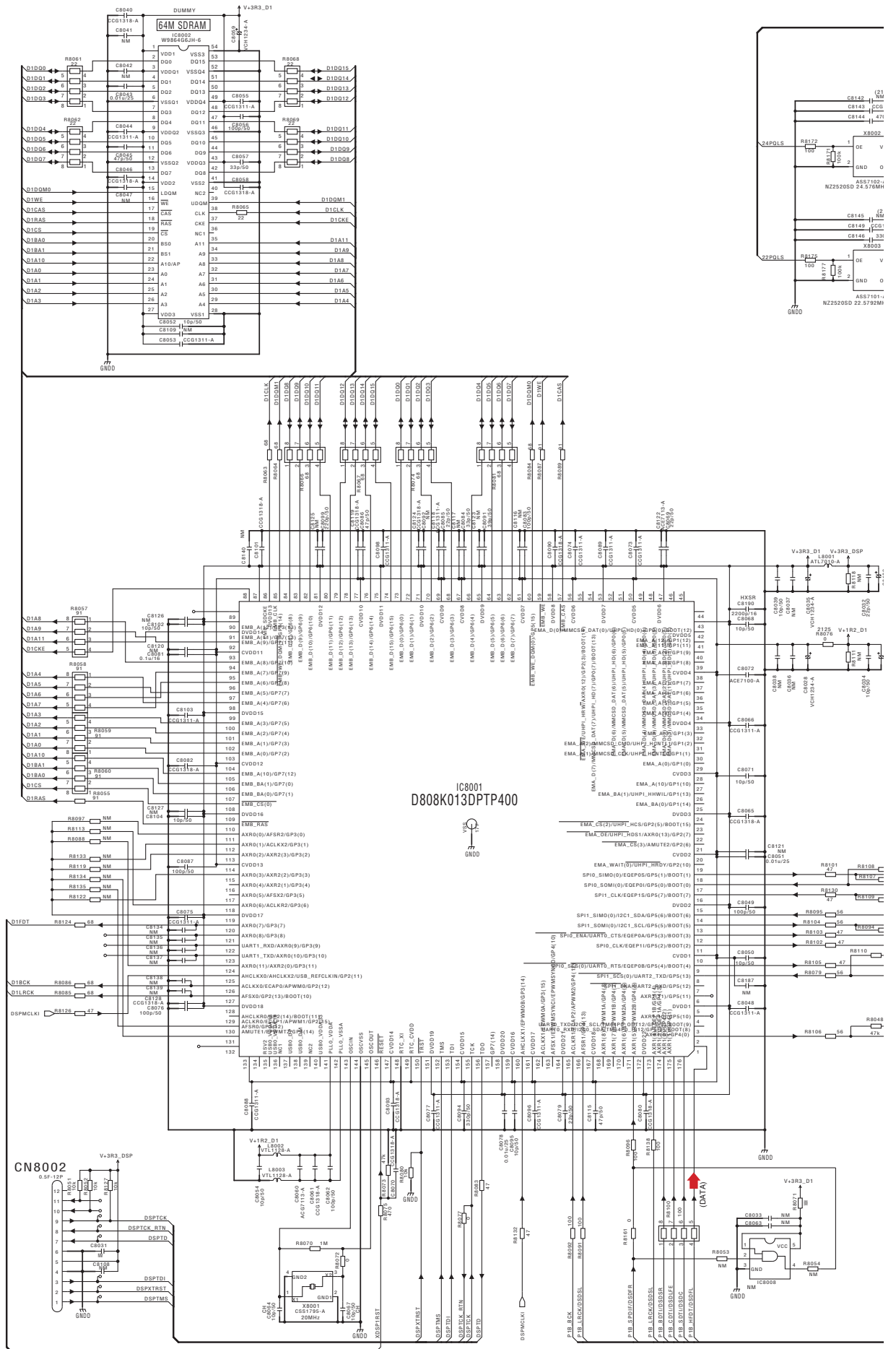
⚠ 印の部品は、安全上重要な部品です。
交換するときは、安全および性能維持のため
必ず指定の部品をご使用ください。

A 10/10
MAIN BOARD ASSY
 (YXE8: 08-BDLX88-MA1/Y)
 (LXE: 08-BDLX88-MA2)
 (FXE: 08-BDLX88-MA2/F)

	VWV2453 {LX88}	VWV2454 {LX58}
C9757	NH	ACG7113-A

	VMV2453 (LX88)	VMV2454 (LX58)
C9475	NM	ACE7100-A
C9736	NM	ACE7100-A
C9736	NM	ACE7100-A
R9458	O	
R9459	O	NM
R9460	O	NM
CN1511	NM	AKR7366-1

10.11 DSP BOARD ASSY



BDP-LX88-K

A



A 6/10
CN1501



D

F



4



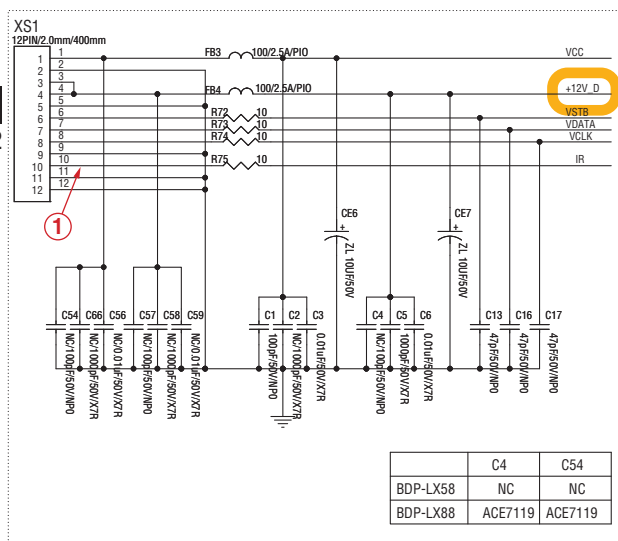


⚠ 印の部品は、安全上重要な部品です。
交換するときは、安全および性能維持のため
必ず指定の部品をご使用ください。

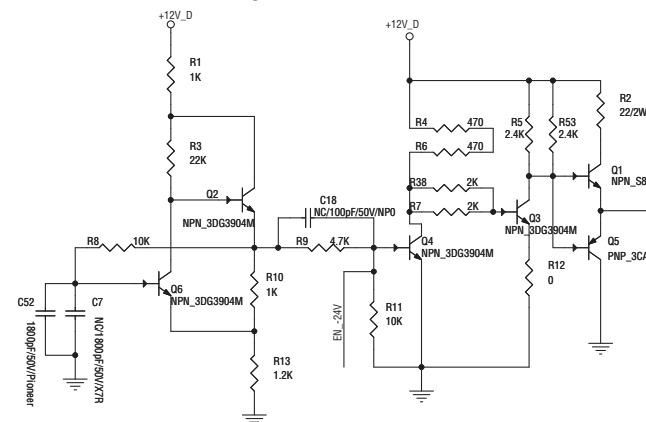
4

B

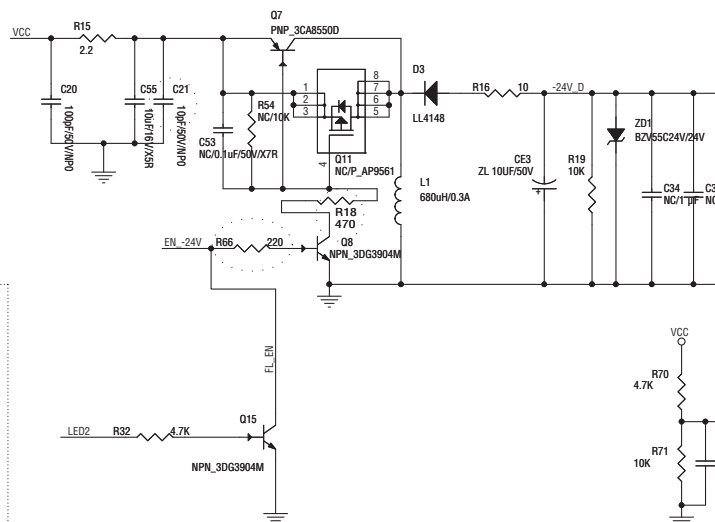
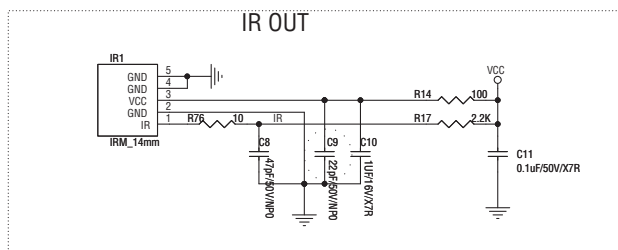
XP2



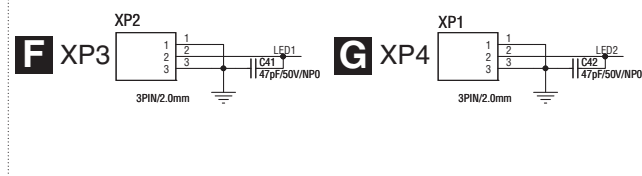
FL_EN: CONTROL FILAMENT VOLTAGE SWITCH
H: ON
L: OFF



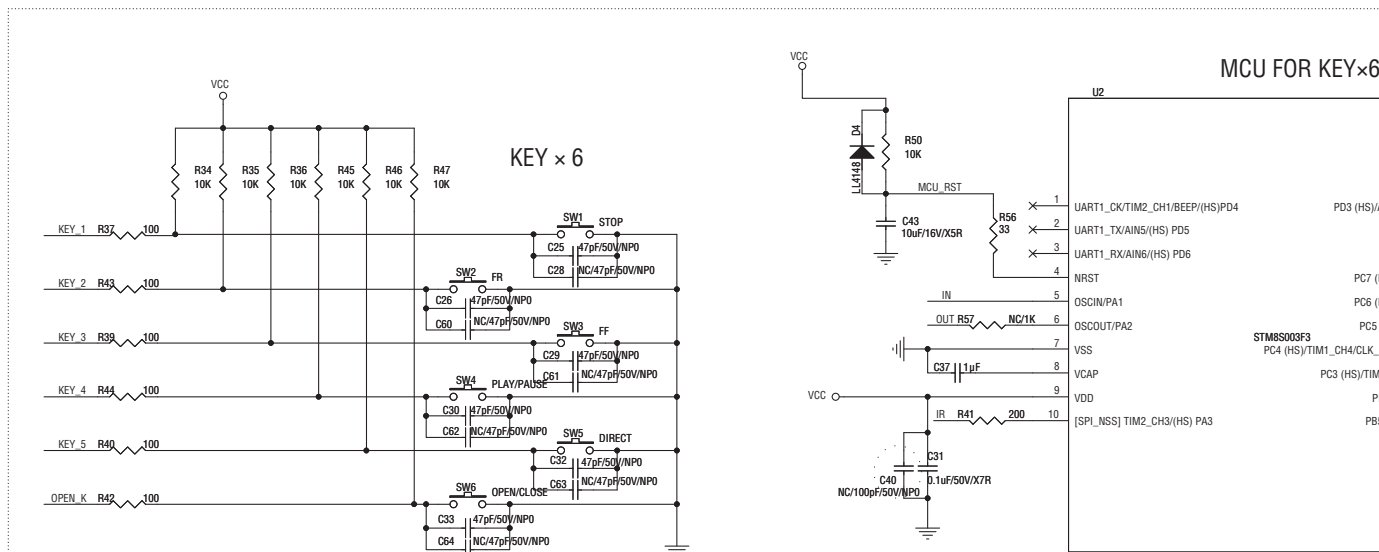
C



D



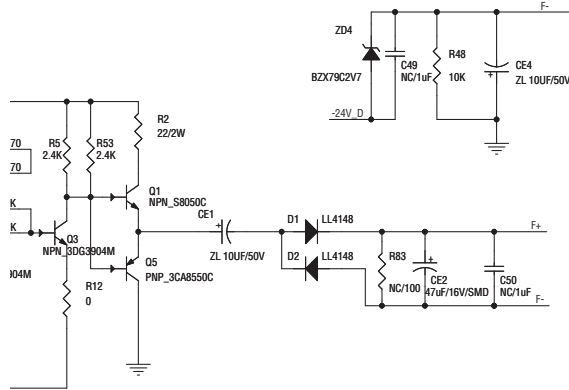
E



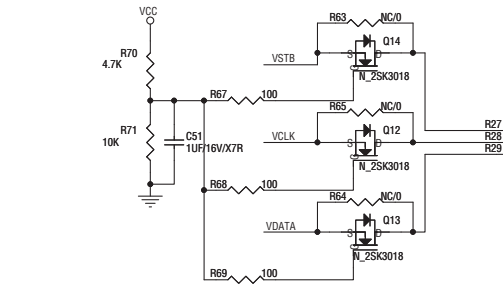
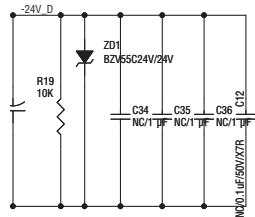
D

FRONT CONTROL BOARD ASSY (08-BDLX88-FV1)

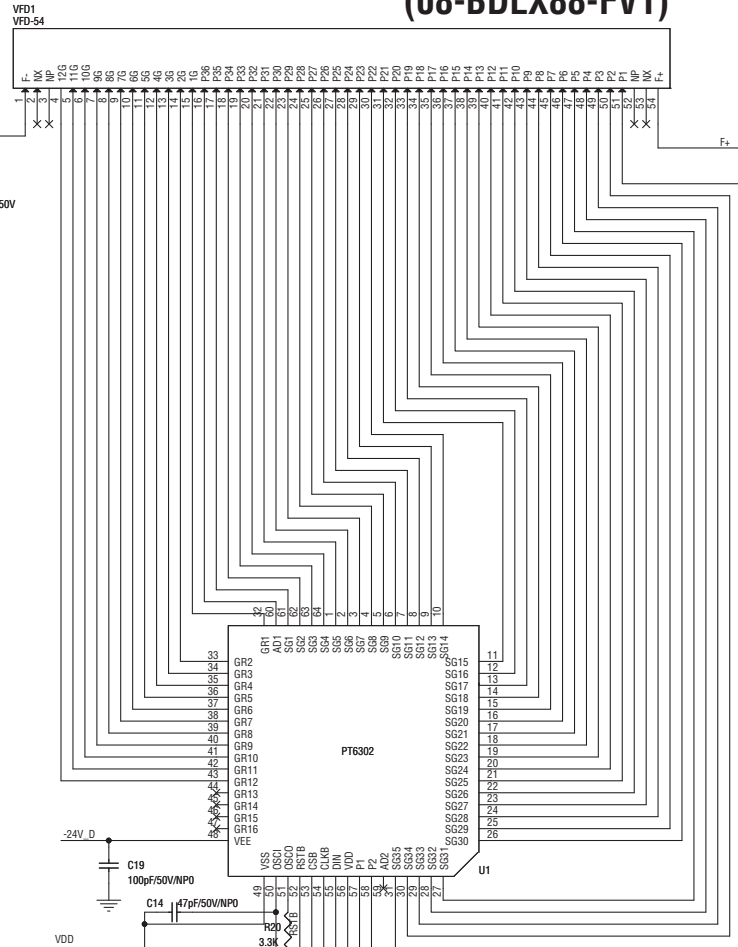
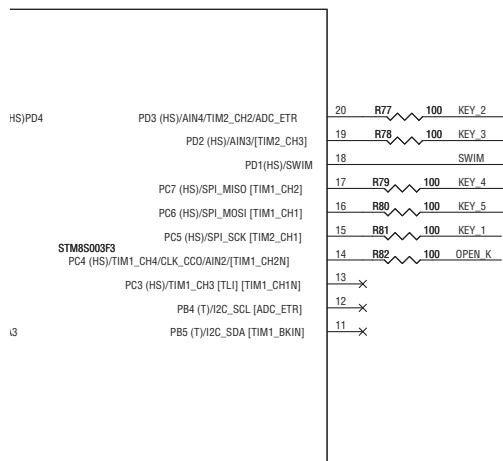
NT VOLTAGE SWITCH



FV DISPLAY



MCU FOR KEY×6 SCAN

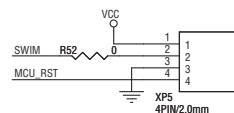


LED1 --- DIRECT LED
LED2 --- FL LED

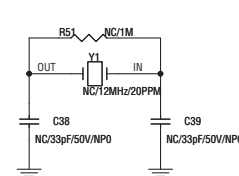
DIRECT LED ON/OFF
FL OFF ... LED OFF
DIRECT ON ... LED ON

C23	R84
BDP-LX58	100pF/50V
BDP-LX88	NC
	100pF/50V

DEBUG PORT

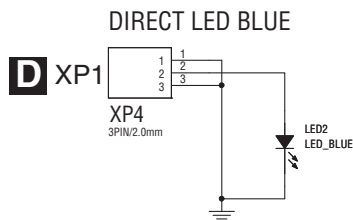


XTAL RESERVE

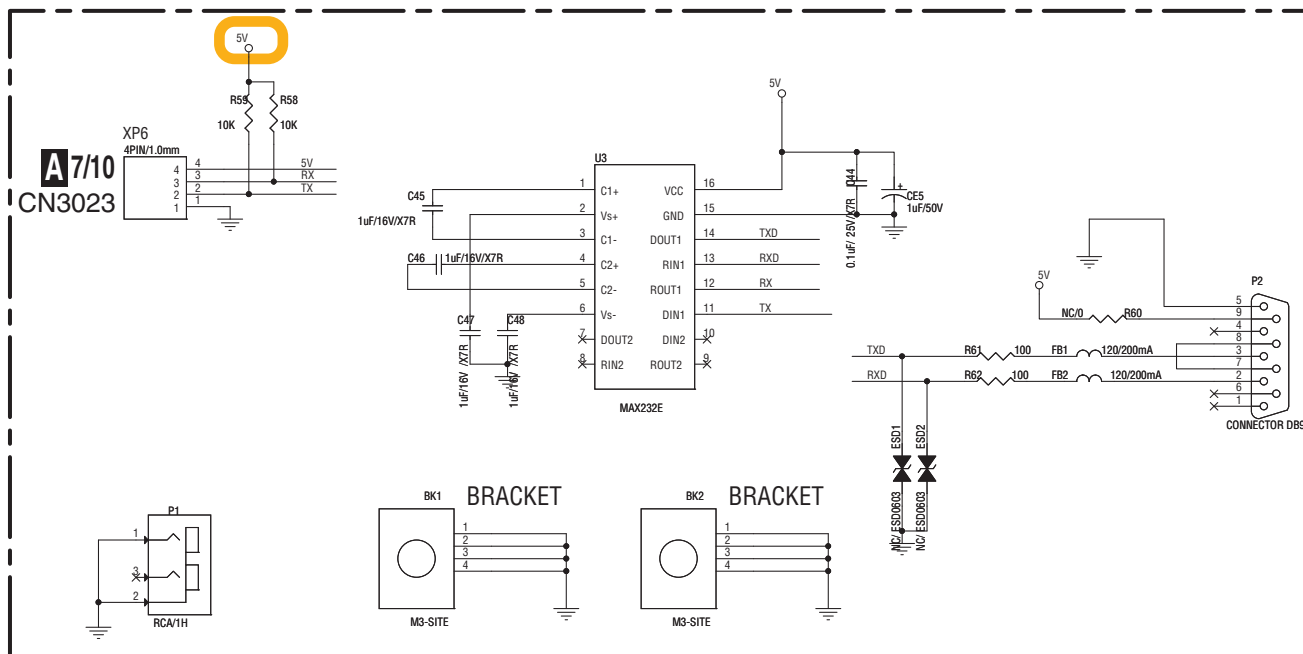


E SWITCH BOARD ASSY (08-BDLX88-SW0)

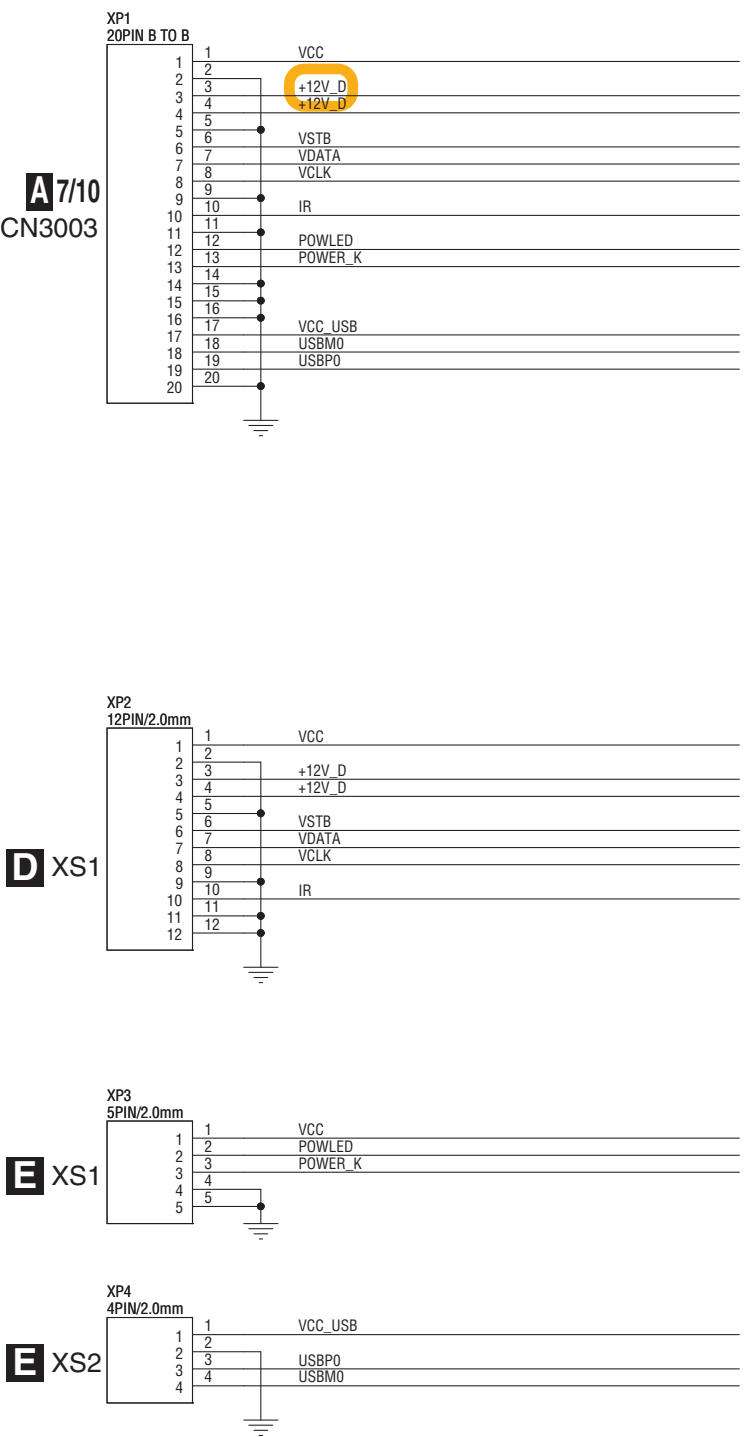
D



H RS BOARD ASSY (08-BDLX88-RS0)



I RELAY BOARD ASSY (08-BDLX88-RL0)



4

A

**CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE,
REPLACE WITH SAME TYPE AND RATINGS OF FUSE.**



BDP-LX88 ONLY

A



C

D

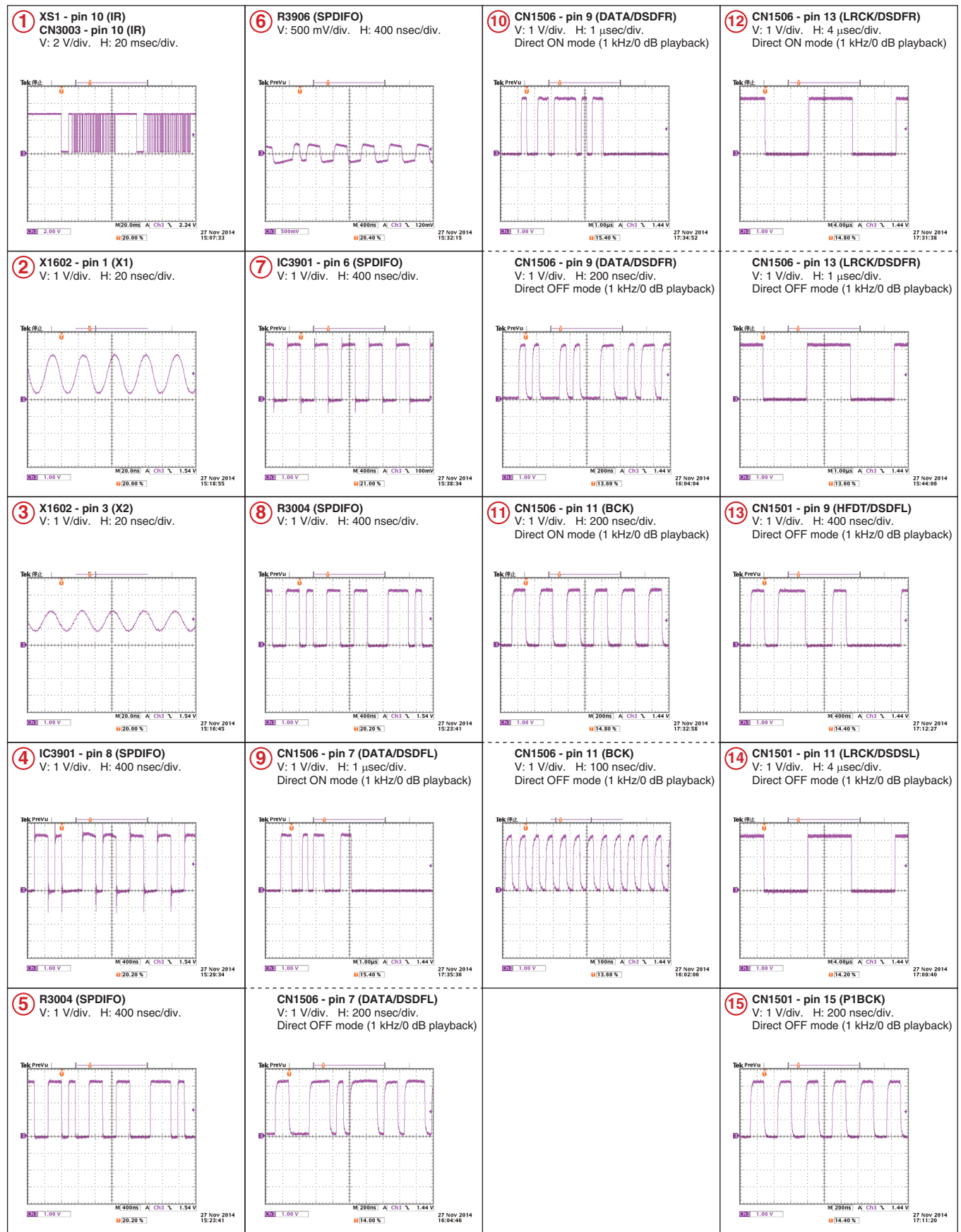
F

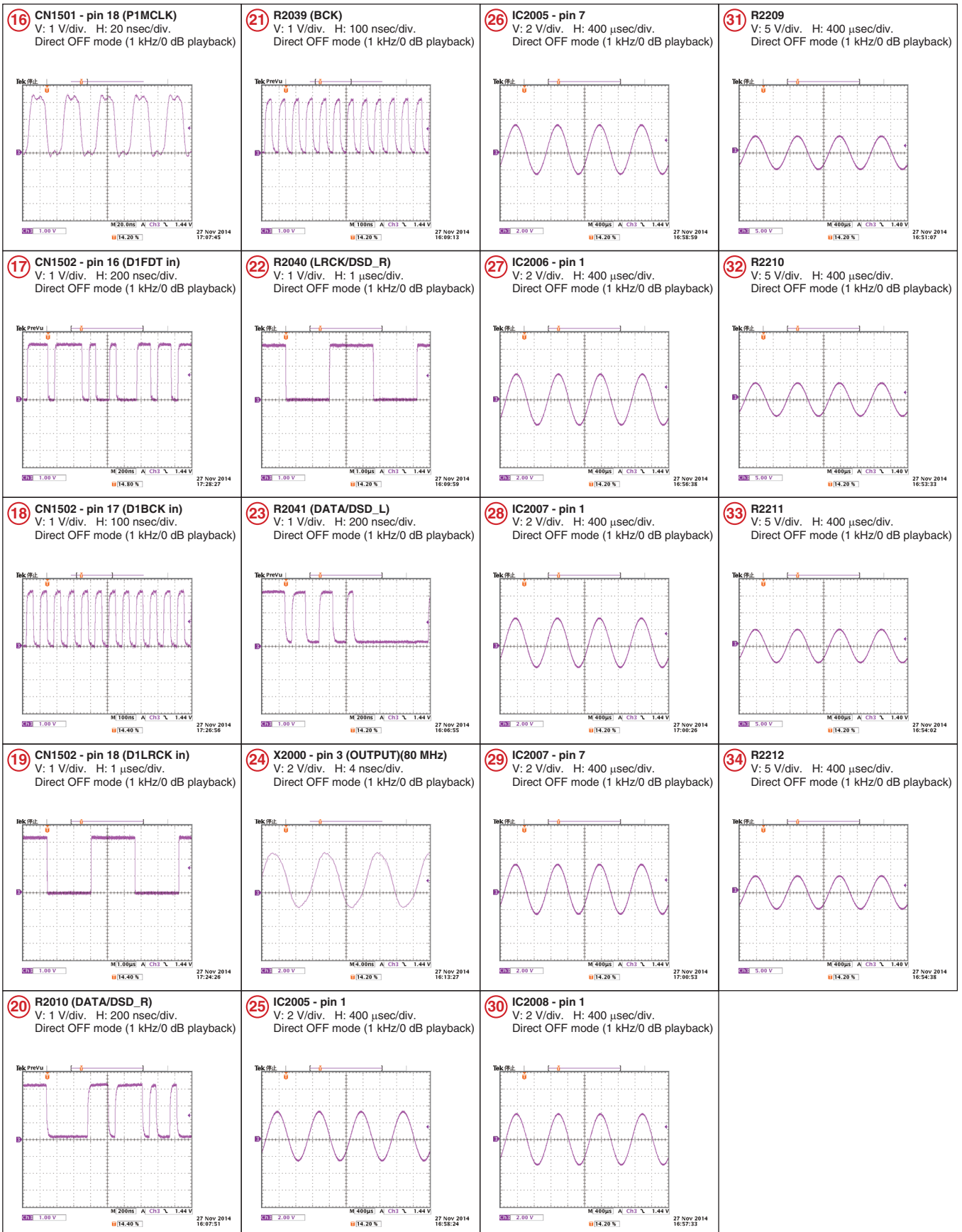
F

10.17 WAVEFORMS

注意: ○で囲まれた数字は回路図の各測定ポイントの番号を示します。

NOTE: The encircled numbers denote measuring point in the schematic diagram.





A



F

E

A



C

D

E

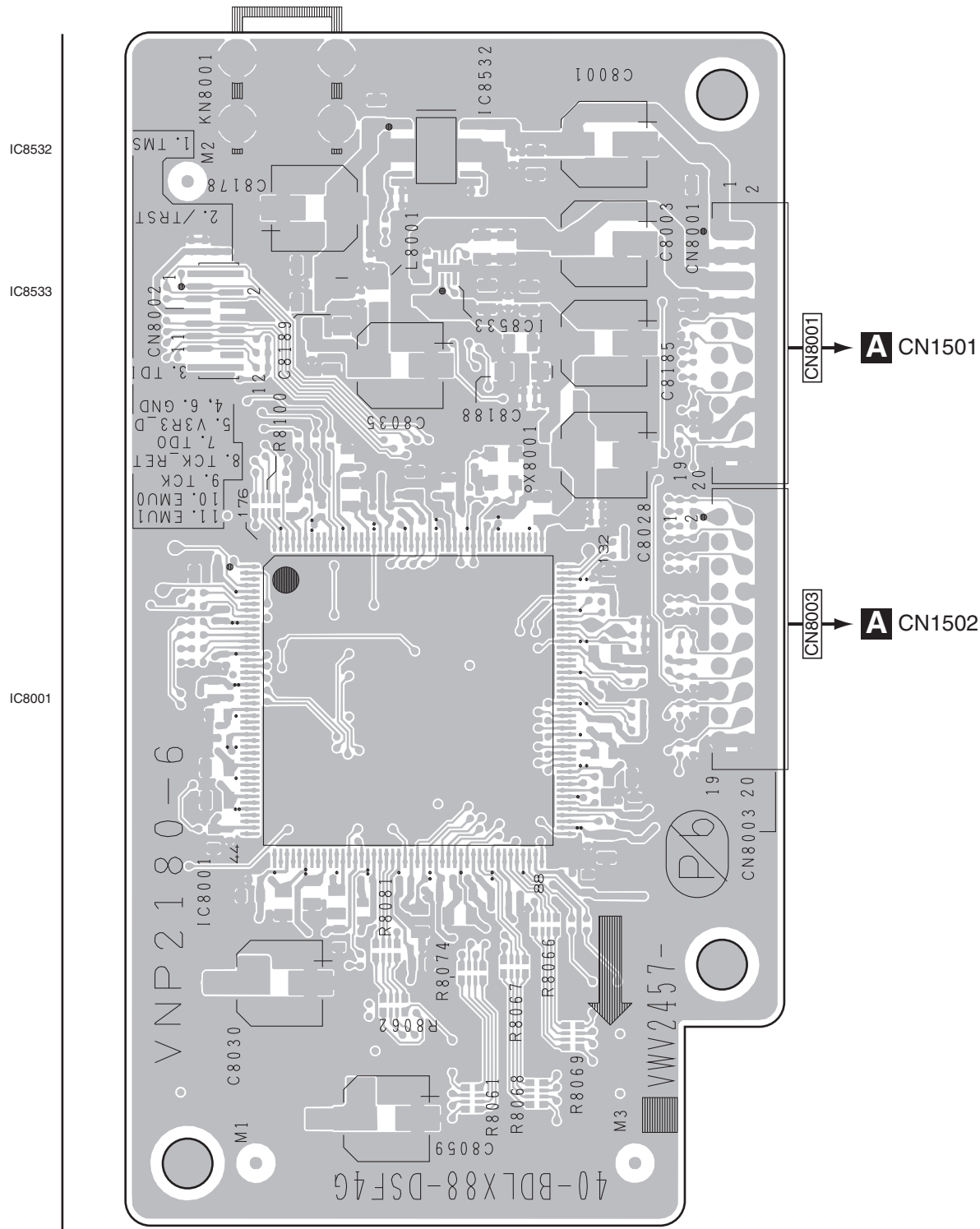
F

11.2 DSP BOARD ASSY

SIDE A

SIDE A

B DSP BOARD ASSY

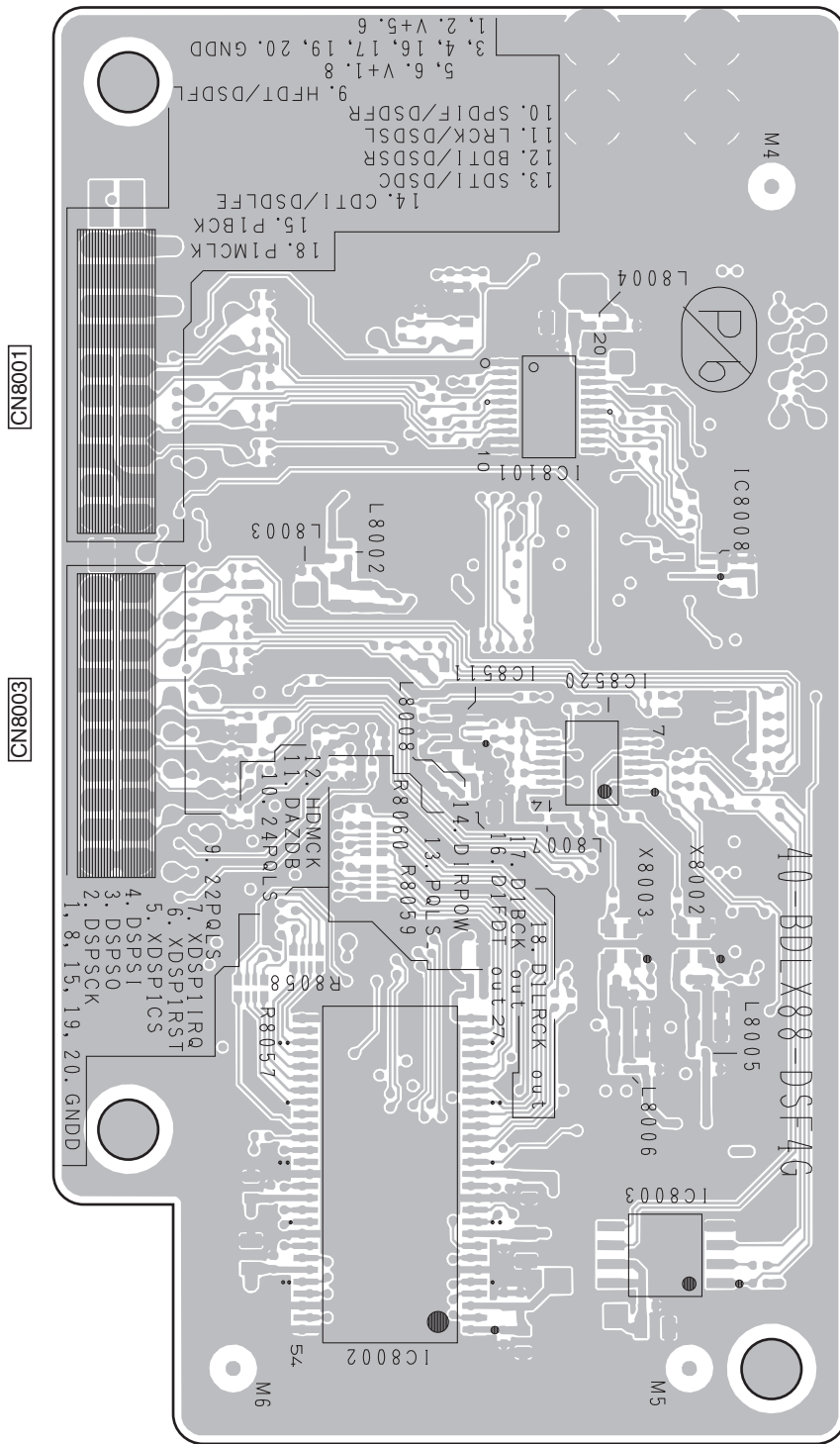


B

SIDE B

SIDE B

B DSP BOARD ASSY



11.3 AUDIO BOARD ASSY

SIDE A

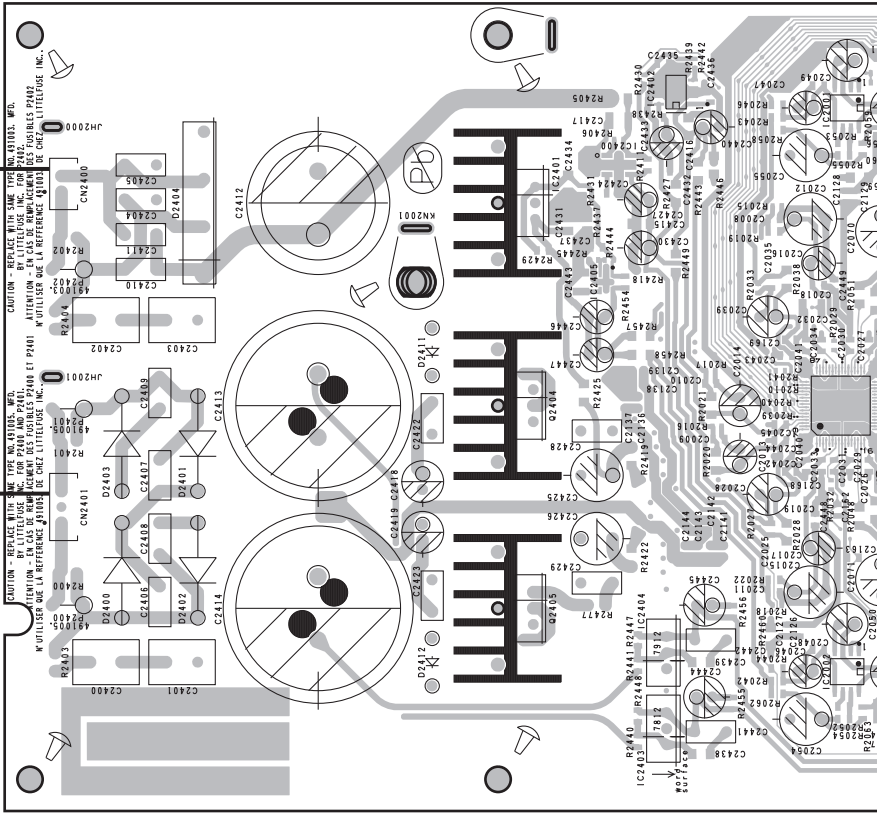
C AUDIO BOARD ASSY

AUDIO TRANS

CN2400

AUDIO TRANS

CN2401



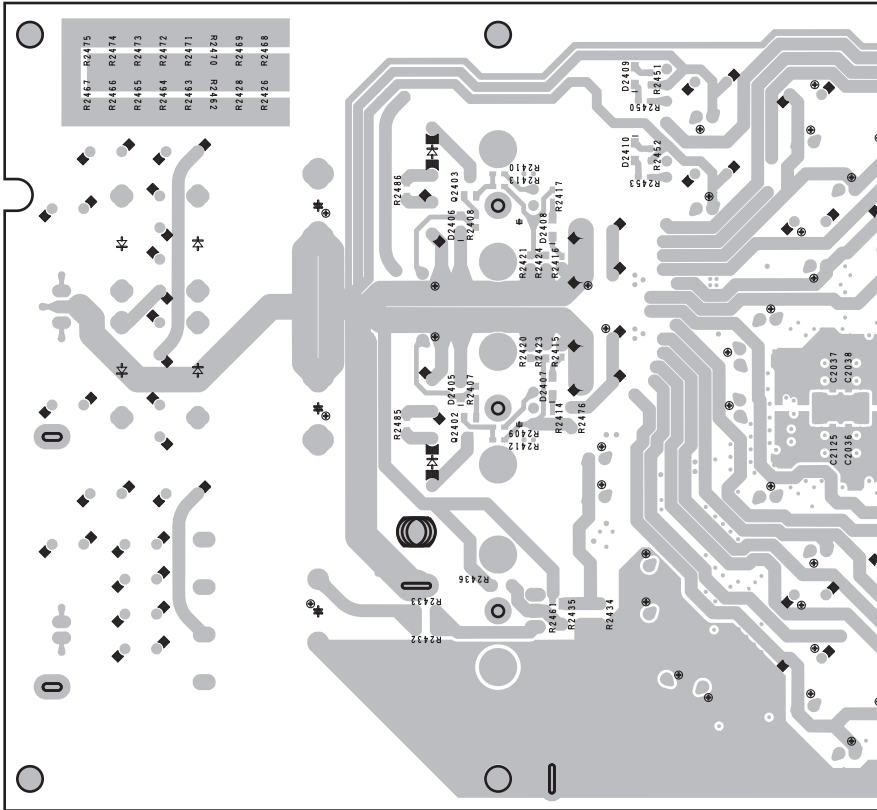
IC2401	IC2402	IC2001
Q2404	IC2404	IC2000
Q2405	IC2403	IC2002

SIDE B

C AUDIO BOARD ASSY

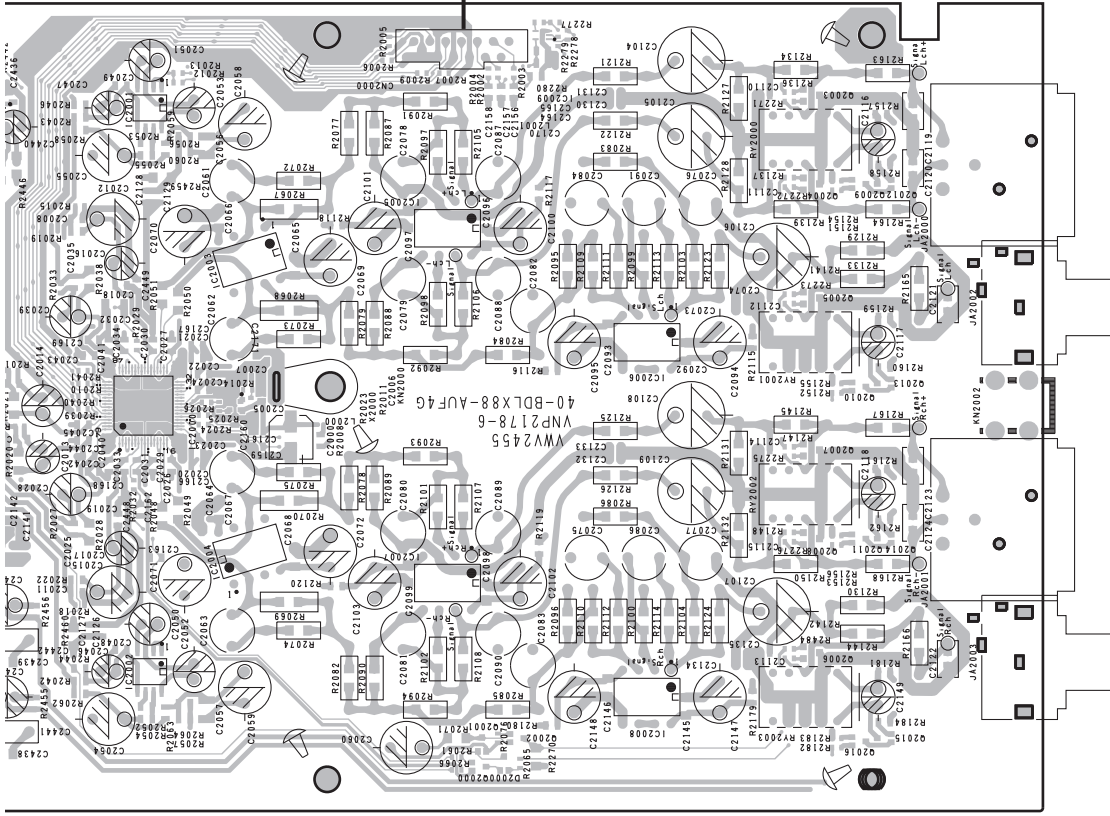
CN2401

CN2400



Q2403

C

CN2000 → **A** CN1506**SIDE A**

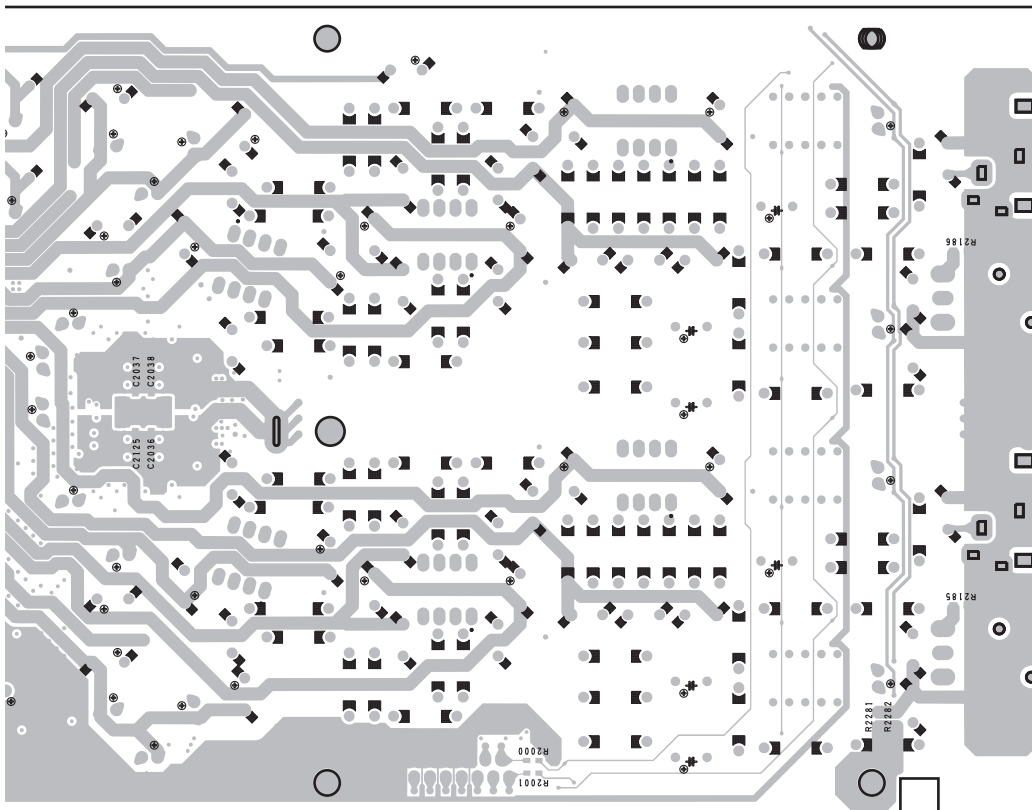
IC2001
IC2000
IC2002

IC2003
IC2004

IC2005
IC2007
Q2000 Q2001

IC2006
IC2008

Q2003
Q2004 Q2009 Q2010
Q2007 Q2011 Q2014
Q2008 Q2006 Q2016

SIDE B

CN2000

BDP-LX88-K

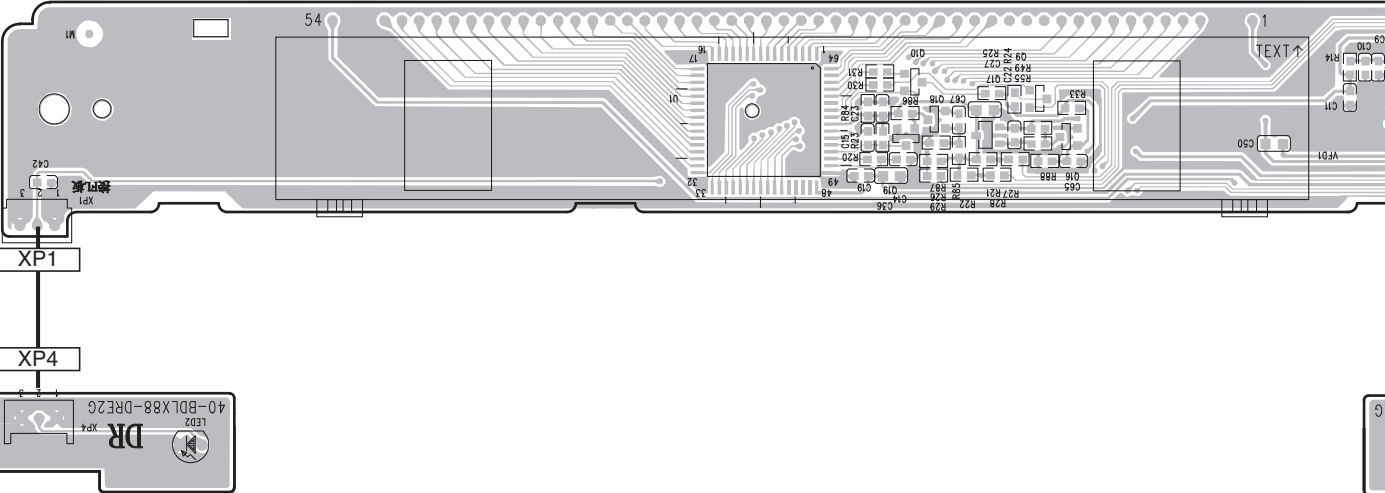
C

11.4 FRONT CONTROL, SWITCH and LED BOARD ASSYS

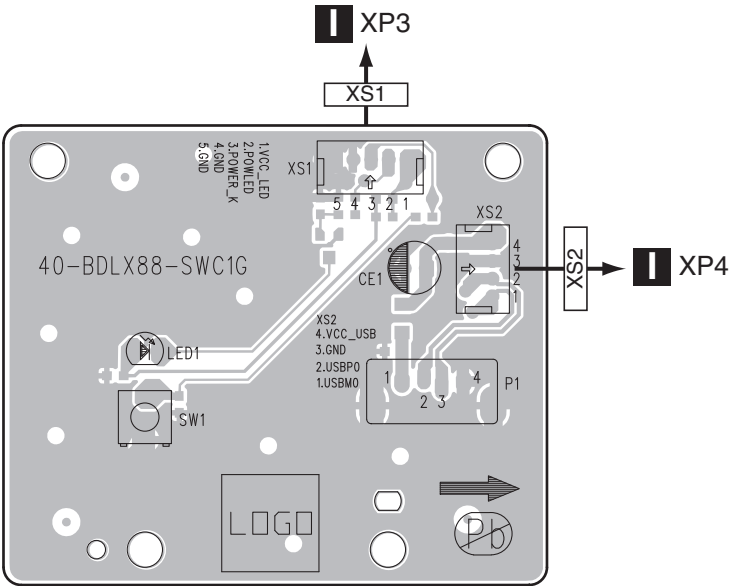
SIDE A



D FRONT CONTROL BOARD ASSY



G LED BOARD ASSY

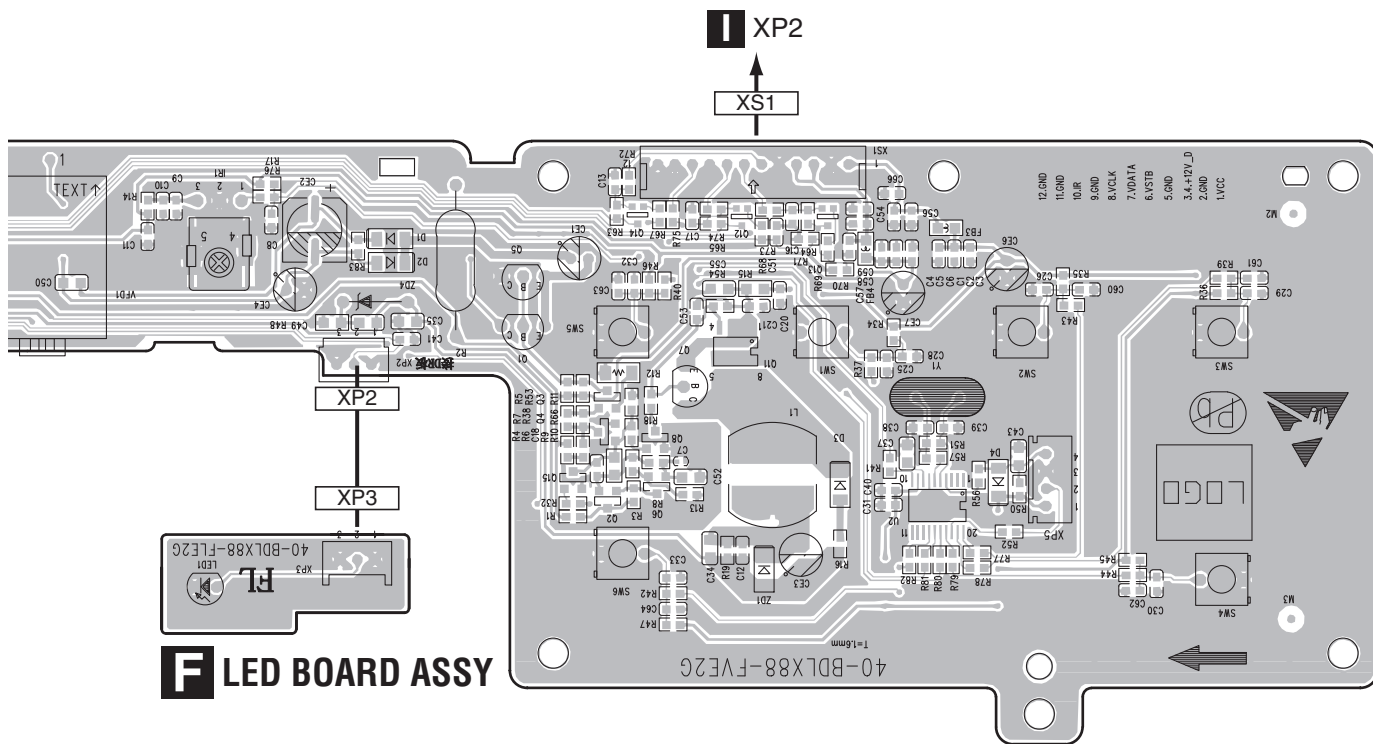


E SWITCH BOARD ASSY

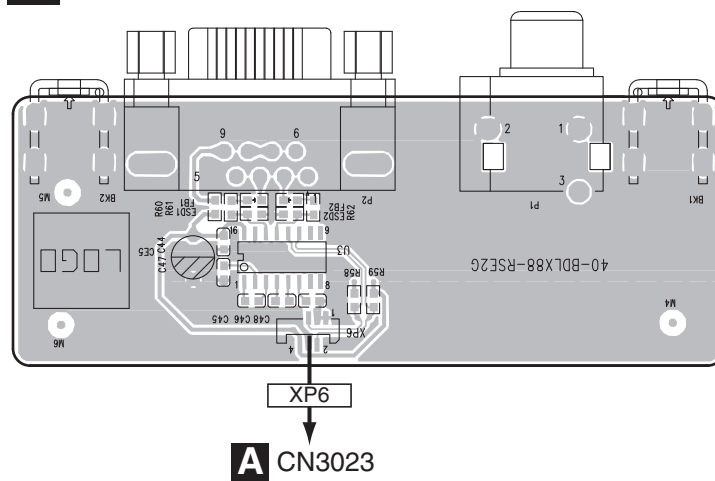
D E G

SIDE A

Q5
Q1
Q3 Q14 Q12
Q4 Q8 Q7 Q11 Q13
Q15 Q6 U2



RS BOARD ASSY



U3

D F H

SIDE B

A

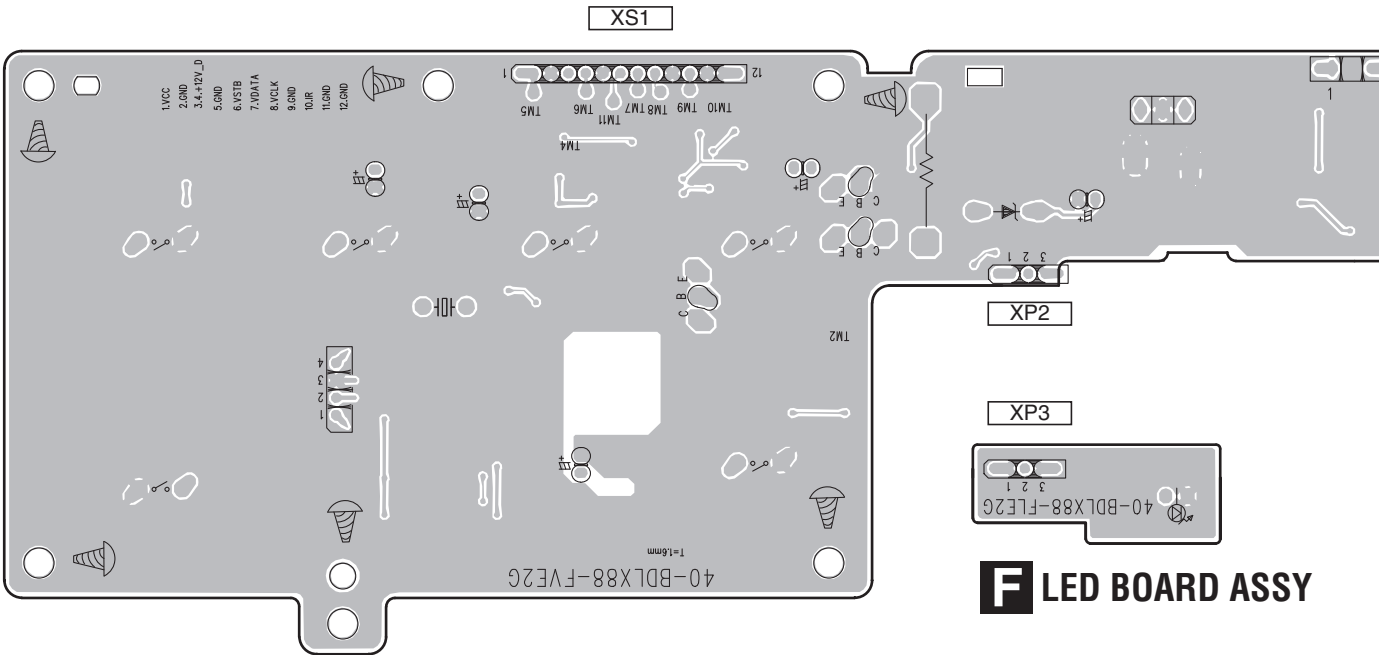
B

C

D

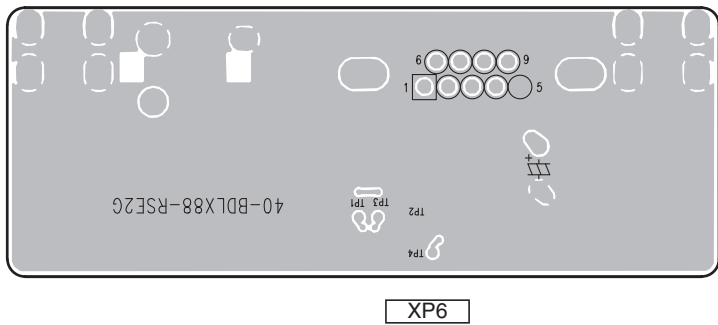
E

F



F LED BOARD ASSY

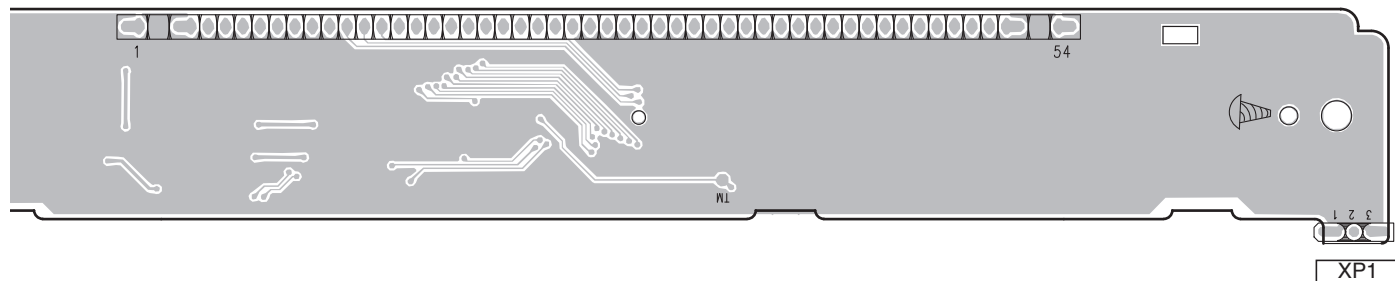
H RS BOARD ASSY



SIDE B

A

D FRONT CONTROL BOARD ASSY

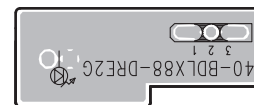


B



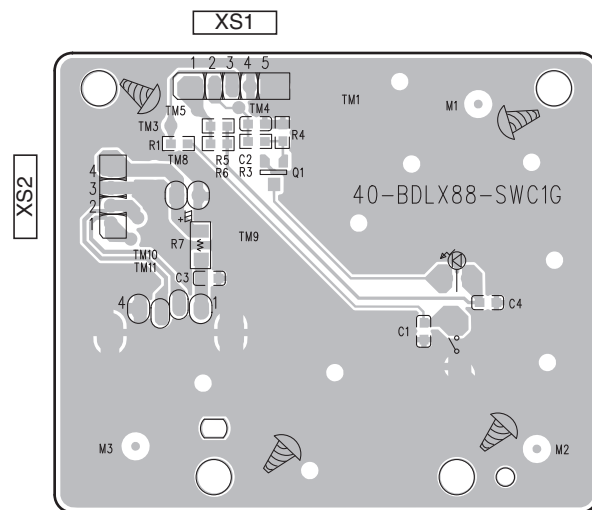
D ASSY

XP4



C

G LED BOARD ASSY



D

E SWITCH BOARD ASSY

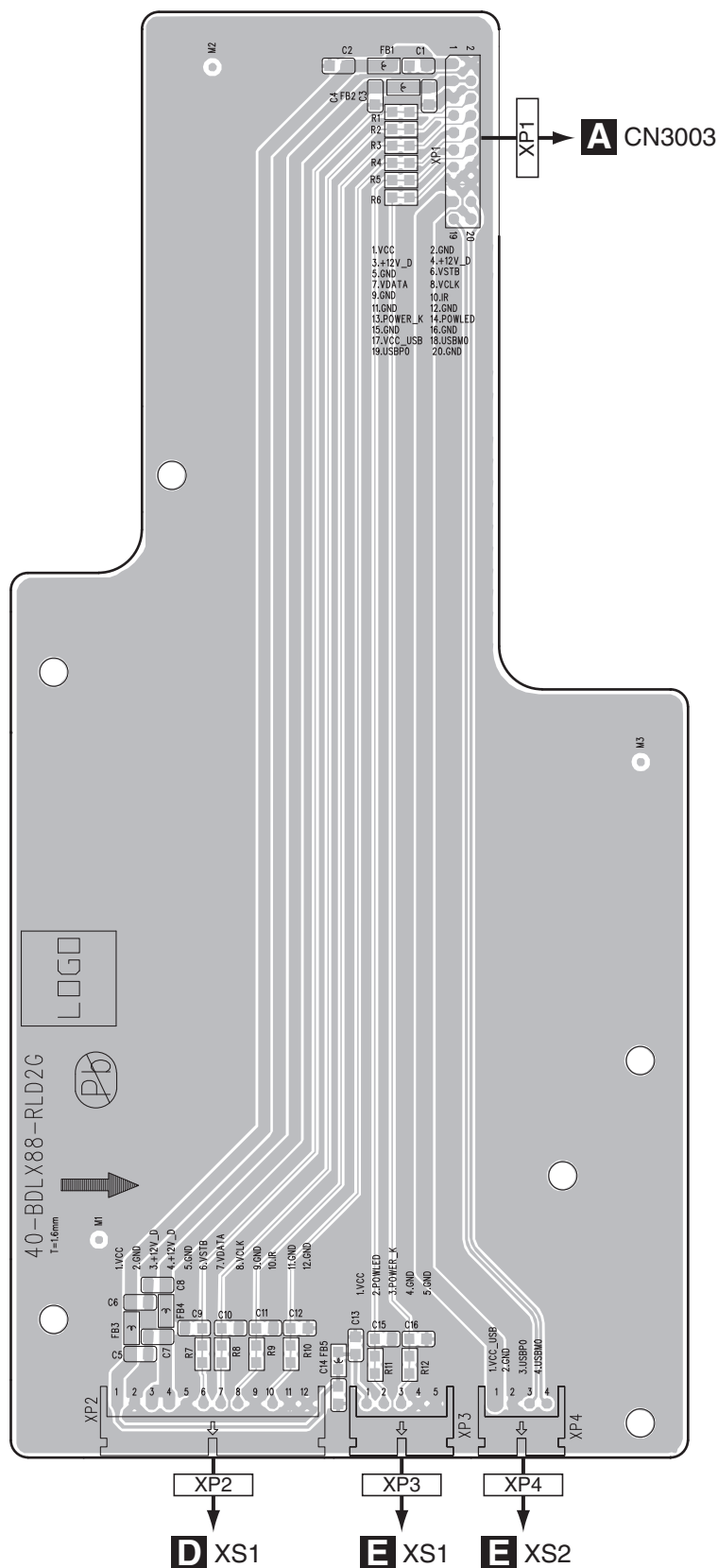
E

D E G

SIDE A

SIDE A

A CN3003

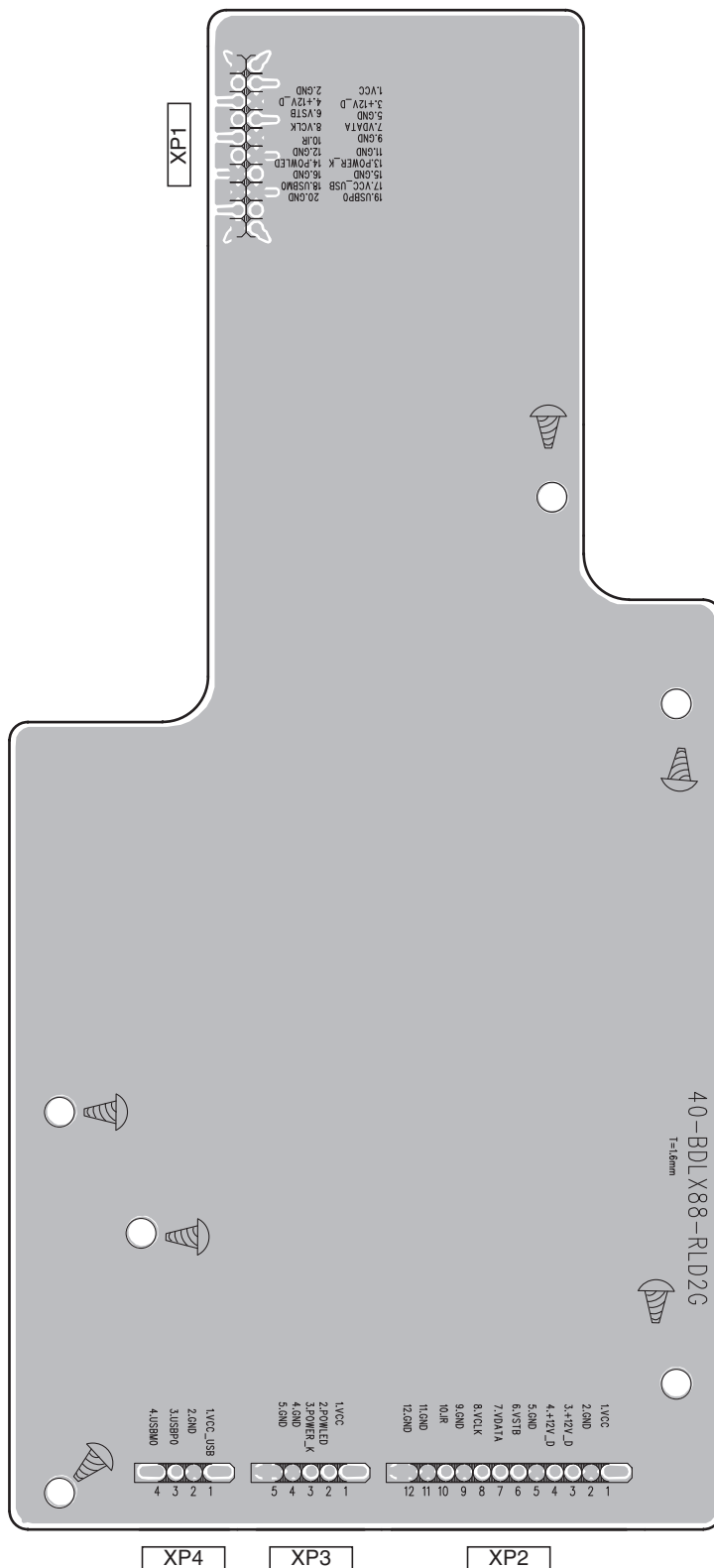
**D**XS1**E**XS1**E**XS2

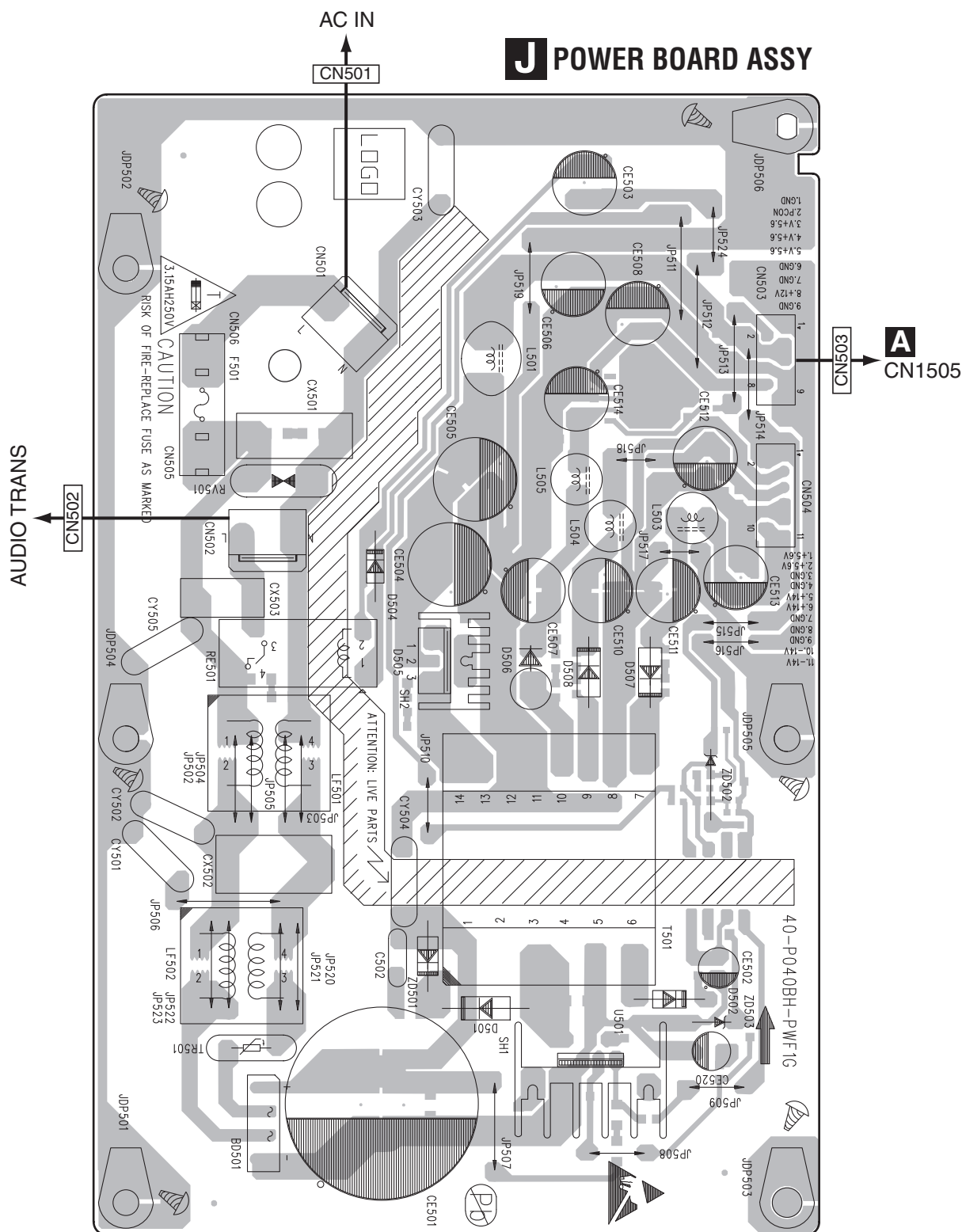
BDP-LX88-K

SIDE B

SIDE B

RELAY BOARD ASSY



SIDE A**SIDE A**

BDP-LX88-K

12. PCB PARTS LIST

NOTES: ● Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.

- The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47 k ohm (tolerance is shown by J = 5%, and K = 10%).

560 Ω \rightarrow 56 $\times 10^1$ \rightarrow 561.....RD1/4PU $\begin{bmatrix} 5 & 6 & 1 \end{bmatrix}$ J

47 k Ω \rightarrow 47 $\times 10^3$ \rightarrow 473.....RD1/4PU $\begin{bmatrix} 4 & 7 & 3 \end{bmatrix}$ J

0.5 Ω \rightarrow R50.....RN2H $\begin{bmatrix} R & 5 & 0 \end{bmatrix}$ K

1 Ω \rightarrow 1R0.....RS1P $\begin{bmatrix} 1 & R & 0 \end{bmatrix}$ K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62 k Ω \rightarrow 562 $\times 10^1$ \rightarrow 5621.....RN1/4PC $\begin{bmatrix} 5 & 6 & 2 & 1 \end{bmatrix}$ F

Mark No. Description Part No.

LIST OF ASSEMBLIES

1..MAIN BOARD ASSY (YXE8) 08-BDLX88-MA1/Y
1..MAIN BOARD ASSY (LXE) 08-BDLX88-MA2
1..MAIN BOARD ASSY (FXE) 08-BDLX88-MA2/F

1..DSP BOARD ASSY 08-BDLX88-DS1
1..AUDIO BOARD ASSY 08-BDLX88-AD1
1..FRONT CONTROL BOARD ASSY 08-BDLX88-FV1
1..SWITCH BOARD ASSY 08-BDLX88-SW0
1..LED BOARD ASSY 08-BDLX88-LE1

1..LED BOARD ASSY 08-BDLX88-LE0
1..RS BOARD ASSY 08-BDLX88-RS0
1..RELAY BOARD ASSY 08-BDLX88-RL0
1..POWER BOARD ASSY 08-BDLX88-PW2

Mark No. Description Part No.

X 1201 20 MHz ASS7114
X 101 12 MHz ASS7120
4PIN FFC CABLE 46-FF008C-04AV

B DSP BOARD ASSY SEMICONDUCTORS

\triangle IC 8532 S-1172B33-E6
 \triangle IC 8533 MIC94325YMT

MISCELLANEOUS

X 8001 20 MHz CSS1795
X 8002 24.576 MHz ASS7102
X 8003 22.5792 MHz ASS7101
CN8001,8003 20PIN AKP7249

Mark No. Description Part No.

A MAIN BOARD ASSY SEMICONDUCTORS

\triangle IC 9404,9508,9515 MIC94325YMT
IC 1216 BD3539NUX
 \triangle IC 9101 S-1112B33MC-L6S
 \triangle IC 9406,9531 S-1170B50UC-OUJ
 \triangle IC 9402 S-1172B10-U5

\triangle IC 9102,9525,9532 S-1172B33-E6
 \triangle IC 9103 NJM2830U1-08
 \triangle IC 9104 BAO0DDOWHFP
 \triangle IC 9403 MM3543BH
 \triangle IC 9527,9529,9530 BD9328EFJ

\triangle IC 9528 BD9329EFJ
IC 3004 S-80927CNNB-G8X
IC 4003 S-80848CNMC-B89

MISCELLANEOUS

JA 3901 RCA Jack 1P Black 47-RCA337-XX3
JA 3902 RECEIVING MODULE 02-PTX017-XX0
JA 1601,1603 HDMI JACK 47-HDI014-XX0
JA 3002 USB JACK 47-USB015-XX0
JA 3801 RJ45 JACK 47-RJ4501-XX0

CN 1505 DIP 9PIN AKP7274
CN 1506 DIP 13PIN BKP1165
CN 1501,1502,3003 DIP 20PIN AKM7171
X 3001 VCXO 27 MHz VSS1231
X 1602 27 MHz ASS7123

X 602 36.864 MHz ASS7126

C AUDIO BOARD ASSY SEMICONDUCTORS

IC 2000 ES9018S-K
IC 2001,2002 NJM5532MD
IC 2003-2008 13-OPA260-4AP2
 \triangle IC 2009 TC7SH32FUS1
 \triangle IC 2400 NJM2880U1-33

\triangle IC 2401 NJM78M56FA
 \triangle IC 2402 S-1172B12-E6
IC 2403 NJM7812FA
IC 2404 NJM7912FA
 \triangle IC 2405 NJM2872BF33

Q 2404 2SC4883A(OY)
Q 2405 2SA1859A(OY)
D 2400-2403 30GFA20-C331B
D 2404 LN4SB60-4003

MISCELLANEOUS

CN2000 B to B Connector 13pin AKP7276
X 2000 Xtal 80 MHz ASS7124
 \triangle P 2400,2401 5A 491005.PAR (Little) AEK7019
 \triangle P 2402 3A 491003.PAR (Little) AEK7015
RY 2000-2003 Relay CSR1031
JA 2000,2001 XLR Port DKN1551
JA 2002,2003 RCA Jack 1P Black 47-RCA314-XX3

CAPACITORS

C 2104-2109 VCH1288

Mark

No.

Description

Part No.

D FRONT CONTROL BOARD ASSY			
MISCELLANEOUS			
XS 1	12PIN CABLE	46-FH040T-12SF	
SW1-6	SWITCH TACT	48-TAC041-XX0	

A

E SWITCH BOARD ASSY

MISCELLANEOUS

XS 2	USB 4PIN CABLE	46-FH016F-04SX
XS 1	5PIN CABLE	46-FH016T-05I
P 1	USB JACK	47-USB013-XX2
SW1	SWITCH TACT	48-TAC041-XX0

B

F LED BOARD ASSY

There is no service parts.

G LED BOARD ASSY

There is no service parts.

C

H RS BOARD ASSY

MISCELLANEOUS

P 1	RCA Jack 1P Black	47-RCA306-XX3
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I RELAY BOARD ASSY

There is no service parts.

D

I POWER BOARD ASSY

There is no service parts.

F